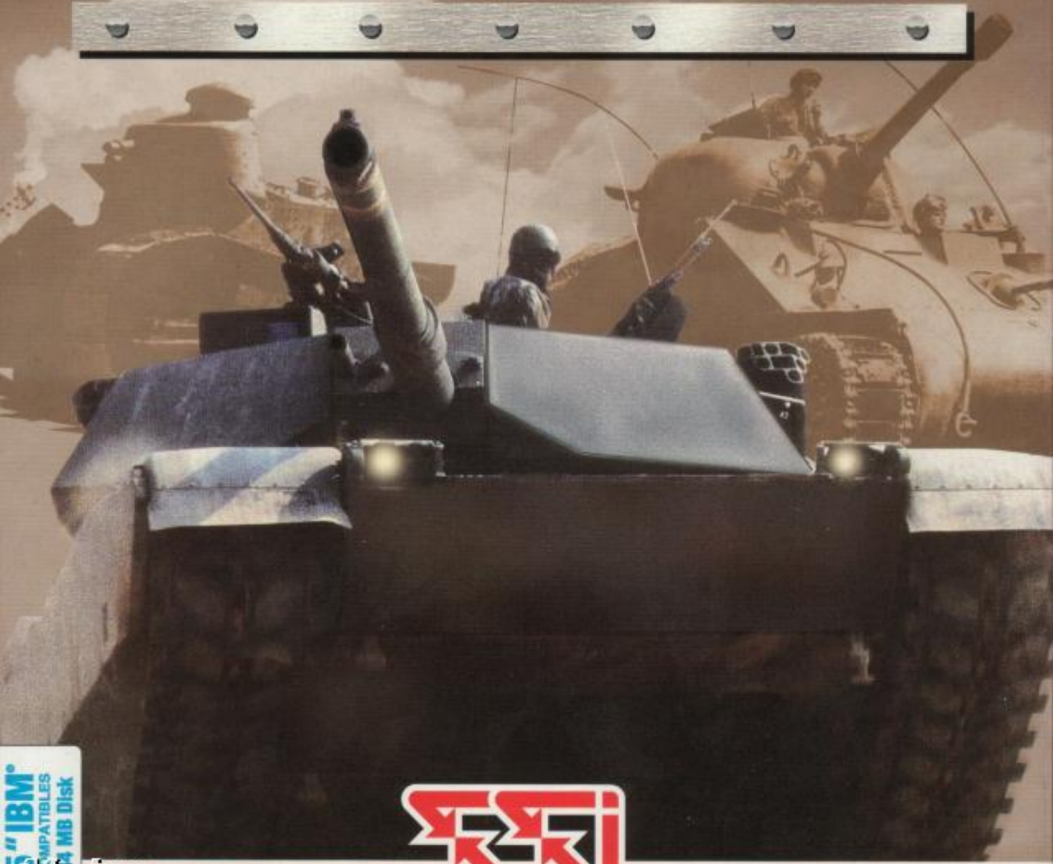


WARGAME CONSTRUCTION SET II: TANKS!



3.5" IBM®
COMPATIBLES
HD Disk

SSI

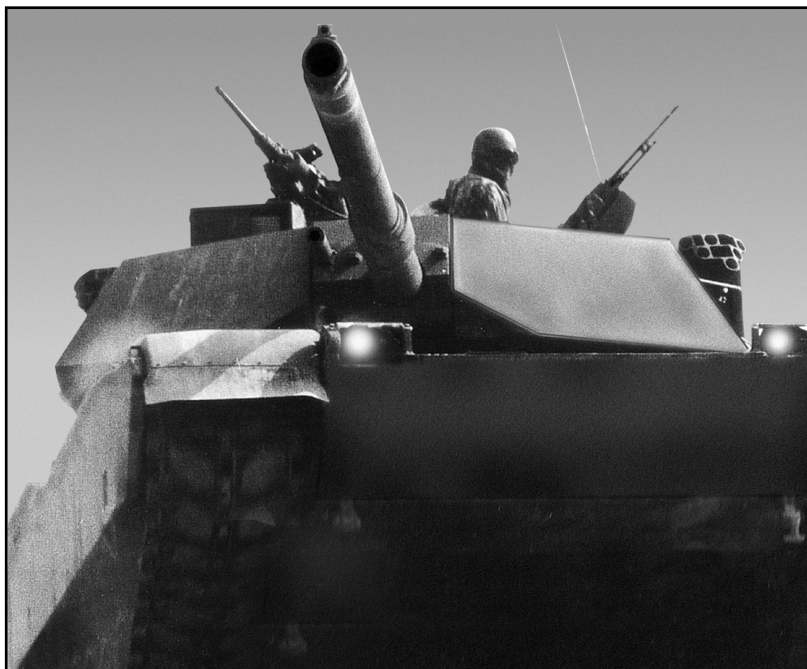
Moby
Games

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As in most fields of human endeavor, the practice of warfare periodically undergoes radical change in relatively short periods of time.

In the fifth century B.C., the introduction of large cavalry forces made the army of Philip II of Macedonia unstoppable. Philip's son, Alexander, inherited this military establishment and went on to conquer the known world. Rome refined the techniques of battlefield mobility and introduced the modern concept of hierarchical unit organization. The tactical flexibility of the legion, later improved by Byzantine innovations, gave the Romans the edge on the battlefield for generations.

With the decay of the Roman Empire, Western military practice degenerated into an unorganized brawl. The battlefield was ruled by armored men on horseback supplemented by large bodies of poorly trained and largely useless foot soldiers. This came to an abrupt end with the introduction of effective longbow tactics at Crecy in 1346.

The pattern of innovation, military success, and an extended period of conservatism has been repeated many times in military history. The conservative period is characterized by incremental improvements on time-proven tactics and increasing stagnation on the battlefield. Eventually, an innovative commander makes use of a new technology, or more rarely, a simple tactical concept to achieve victory and upset conventional military thought.

By 1917, the Great War had been dragging on for three years with no end in sight. Battlefield tactics were essentially indistinguishable from those of the mid-19th century. Massed artillery and war gasses produced temporary successes but effective counter-measures rendered these innovations impotent before they could be exploited. Desperation drove both sides to seek new ways to break the stalemate. Germany created new tactics. England and France created the tank.

Each side achieved great success with the introduction of these new solutions to the problem of battlefield stagnation. Some measure of mobility was restored to the battlefield, although the final result of the Great War owed more to American intervention and the Allied blockade of the European continent than to the new techniques.

In fact, the introduction of tanks and improved tactics only laid the foundation for modern mechanized warfare. These new tools had to be refined and combined in order to usher in a new era of battlefield mobility. By the beginning of the second world war, all of the elements required for a major change in military practice were in place. In 1939-40, the sensational successes of the German army altered military thinking as thoroughly as had the successes of the Macedonians 2500 years earlier. Within months, every major army on the planet had adopted variations of the tactics of the "blitzkrieg".

Clearly, we have entered a new period of military conservatism. For the last half century, the tactics of the mechanized battlefield have incrementally evolved. A military commander of World War II would be quite comfortable commanding on the modern battlefield. In the near future we may witness the introduction of a new device or tactic that renders current battlefield practices obsolete. But, in the hands of competent, well-motivated troops, the tools and techniques that shocked the world in the early years of the second world war can still produce sensational results.

🔧 THE README FILE

There is a file called "README.TXT" in your game directory. This file contains any last minute changes that could not be addressed in this rule book or on the data card. Please check this file for significant information.

🔧 THE GAME

TANKS! is a tactical (platoon/section level) wargame of 20th century mechanized warfare. In most scenarios, you control brigade or regiment-sized forces.

The scale of the game is 250 meters/hex, 5 minutes per turn. Individual units represent sections, batteries, platoons or (in the WW I scenarios) companies of from one to twenty vehicles or infantry squads. Maneuver formations are companies, battalions, or brigades.

Starting the Game

Before you play the game, install it on your computer's hard drive. Refer to the data card for specific installation and startup instructions.

Your First Game

Scan this rule book for basic concepts and descriptions of on-screen control buttons. You may not need to bother with gritty details at first, but ignorance will soon put you at a disadvantage against a knowledgeable opponent.

For your first game, you might want to ignore the menu bar entirely. The menu gives you access to information that may not mean much until you have a thorough understanding of the rules. Feel free to experiment with the menus, but they are not required for game play.

Game play is very straightforward. You see crosshairs for a mouse pointer on the game map if your units can shoot at the enemy. Tell your units to move by left-clicking on the map. Fire on an enemy unit or pick a new active unit by right-clicking on it. While there are friendly fire rules, the program doesn't let you deliberately order fire on friendly units. Move toward map locations with enemy flag symbols (enemy-controlled objectives) and prevent your opponent from taking your flag hexes (friendly-controlled objectives). If something strange happens, use the "Undo" button and try to figure out what went wrong. When you're finished moving or shooting your units for a turn, click on the "I'm finished" button. The program will save games for you automatically. Left and right-click on everything in sight. Experiment. Have fun. Then come back and re-read the rules.

You can get a feel for how the game works by watching the computer play against itself. If you want to do this, select the Computer Player section of the Play menu and set the computer to play both sides.

Pre-game Choices

Once the program has initialized, you are offered choices: "Play new game", "Play old game", "Play next game", "Go to editor", or "Exit Game". Selecting "Play new game" allows you to pick a scenario to play. "Play old game" loads a previously saved game. "Play next game" starts the next scenario in the current campaign. "Go to editor" allows you use of the game's powerful scenario creation tool. "Exit Game" quits the game and returns you to the operating system.

The "Play next game" option is only available if a campaign is currently in progress.

Game Options

If you decide to play a new game, you have two choices to make: "Game options" or "Scenario".

There are four game option buttons. To change an option, click on the appropriate button until it shows the setting you want.

You can set the intelligence of the computer player to "weak", "moderate", or "strong". First-time players should select a weak opponent.

You can select "standard" command rules or "advanced" command rules. You will see quite a few references to standard and advanced command rules throughout these rules. For your first games, you should leave this set to "standard" command rules and ignore the rules sections devoted to describing the advanced rules.

You can select "simple" or "standard" spotting rules. Under "simple" spotting rules all hexes are always "spotted" so you can always see all enemy units (although local map obstructions can still block direct fire).

You can select "simple" or "standard" ammo rules. Simple ammo rules offer unlimited ammo. This has a very strong effect on play.

Scenario Selection

Once you have set or accepted the game options, choose from a list of scenarios to play. Pick a name from the list.

In addition to the scenarios included in the game, a random scenario may be selected. To do this, click on the "Play random scenario" button and follow the prompts to select historical period, force sizes, etc. Random

scenarios are created with an emphasis on historical accuracy; for example, the Germans won't be attacking Russia from the East in any scenario created during the World War II era.

After picking a game to play, the program takes a while to load the appropriate database before it gives control to you. When everything is loaded, the main game screen appears.

Basic Concepts

Scenarios

A scenario is a particular game situation, comprising a map, objectives, missions, and opposing forces. Generally, a given scenario lasts from ten to twenty turns of game play depending on the sizes and missions of the opposing forces.

Campaigns

A campaign is a sequence of connected scenarios, with each new scenario setup dependent upon the results of the previous scenario. Usually, a campaign lasts from three to eight scenarios.

Equipment

What is Equipment?

Each piece of equipment assigned to a unit is one vehicle, infantry squad, launcher, or gun. Equipment is described in detail in Appendix D on page 57.

General Characteristics

Each type of equipment has a given speed and armament. Armored equipment (tanks, etc.) have separate values for front and side armor.

Special Characteristics

Many equipment types have one or more characteristics that affect performance in special situations. These characteristics have a strong effect on the overall capability of the equipment. A list of special characteristics appears in Appendix D on page 70.

Weapons and Equipment

Pieces of equipment may have as many as two weapons built into them. Some, such as trucks, have no weapons.

Weapons have a given rate of fire, soft attack rating, indirect fire range, and a range-dependent direct fire chance to hit and kill hard (armored) targets. The maximum direct fire range for any weapon is 16 hexes, or 4 kilometers. Most weapons have shorter ranges.

Units

What is a Unit?

As you play the game, you order platoons, sections, batteries, etc. to move from place to place and to fire on targets. To use a board game analogy, these are your "game pieces". These game pieces are "units", small organizations of troops and equipment. Most units consist of three to ten assigned pieces of equipment. There is considerable variation, but most "real" units of this size would have fewer than fifty troops assigned.

The capabilities of a unit are entirely dependent upon the equipment assigned to it and the quality of the troops operating that equipment. Units may not be broken down or combined by players, although the program may automatically merge under-strength units with other nearby units under certain circumstances.

The Active Unit

At any given time, orders may be issued to only one unit. This unit (called the "active" unit) is described in the unit information box at the right of the screen.

Unit Facing

Each unit "faces" or points in a particular direction on the map. In general, units react better to things that happen in front of them. Units equipped with the "facing critical" characteristic are particularly limited in their capabilities.

For each unit, the map is divided into two zones. Everything within 90 degrees of a line extending out the front of the unit is in front of the unit. Everything else is behind the unit, or on its "side".

Three things change a unit's facing:

- When a unit moves, it faces its direction of travel.
- When a unit fires, it faces its target.
- When you click on the facing control button in the unit information box, you alter the facing of the unit.

The effects of facing are described in the "Firing Your Weapons" section on page 20.

Unit Mount Status

Some units have two different types of equipment assigned. In almost all cases, one of the equipment types is a transport of some kind. Such units are considered to be either "mounted" or "dismounted".

The icon used to show the location of a unit on the map corresponds to the piece of equipment displayed at the top of the active unit information box. This top equipment type also defines most of the movement and combat characteristics of the unit.

The faster of the two equipment types assigned to the unit is the transport for the unit. If this faster equipment is shown at the top of the unit info box, the unit is considered to be “mounted”. Otherwise the unit is considered to be “dismounted”.

A mounted unit has the movement and combat capabilities of the transport equipment only. The transported equipment is ignored for all purposes. A mounted unit will be able to move well, but may not be able to employ its weapons.

A dismounted unit has the movement capabilities of the slower equipment which is usually very limited. However, it also has the combined firepower of all equipment assigned to the unit. A dismounted unit has the greatest possible firepower at the expense of mobility.

If you dismount a unit that is being transported by helicopters, the helicopters, having accomplished their mission, disappear. In the time scale of this game, helicopters don’t loiter, nor do they repeatedly pick up and move units, hopping willy nilly about the battlefield. They drop troops and return “home” so they can be used for another task.

Unit icons

Units are shown on the map as icons similar to traditional wargame “counters”. Each icon shows the following information:

- Centered in the top half of the icon is a drawing of the equipment assigned to the unit.
- To the left of the equipment drawing is a vertical column of dots. Each dot represents one piece of equipment assigned to the unit.
- To the right of the equipment drawing an indicator light may appear. If so, the unit is still capable of firing its weapons this turn.
- A small arrow in the lower left corner of the icon shows the direction that the unit is facing.
- A number in the lower right corner of the icon identifies the parent formation of the unit.

- A flag graphic may appear in the center of the lower half of the icon. The flag indicates that the unit is “in communication”. If a flag does not appear, the unit is “out of contact”, and can not be selected as the active unit.
- A small triangle may appear at bottom center of the unit icon. If so, the unit is currently capable of “spotting” hexes within its field of view.

If more than one unit is in a hex, a stack of icons appears - one for each unit in that hex.

Formations

What is a Formation?

All units are assigned to higher level “formations”. Formations range in size from companies to battalions for most units, and from battalions to brigades for artillery units. A typical formation has from three to fifteen units assigned.

In addition to the units assigned, formations have several general characteristics: Control, Morale, and Supply. All of these values have significant effects on your ability to effectively control your units during the game.

- The Control value of a formation is a rating of what professional military people call “Command, Control, and Communications” or c-cubed. It is a reflection of both the troop training level and communications equipment available to units assigned to the formation. This value has an effect on your ability to issue orders to units assigned to the formation. It also has an effect on the ability of units assigned to the formation to communicate their sightings of enemy forces to other friendly units.
- The Morale value of a formation is a rating of the motivation and enthusiasm level the troops in units assigned to the formation have toward their assigned missions. Whenever a unit takes losses, there is a chance that morale falls in its parent formation. Morale affects unit performance in close assaults. It also has a strong effect on your ability to control the units assigned to a formation.
- The Supply value is a general measure of the level of ammo that units of the formation begin with, and the ability to resupply during combat. Ammo is tracked at the unit level during the game, but well-supplied formations have a good chance to resupply units with ammo during a scenario.

The Active Formation

The name of the “active” formation is given in the formation control box at the lower right corner of the game screen. To some extent, your actions are limited to giving orders to units of the active formation.

If you are playing with the standard command rules, there are very few constraints on your ability to give orders to units.

If you are playing with the advanced command rules, you may only issue orders to units assigned to the active formation. You must finish giving orders for the active formation before you can move on to the next one.

Orders

Your role as commander is to issue orders to your units in an attempt to accomplish your mission. Your units follow your orders to the limits of their capabilities.

You issue movement and fire orders by left or right-clicking on the map with the mouse pointer. Details are given on page 11 in the “Playing the Game” section. When you issue a **move or fire order**, the active unit immediately attempts to comply.

Each unit has a fire discipline order: “hold fire” or “auto-fire”. This determines the action of the unit when enemy forces move or fire near the unit. Units with a hold fire order hold their fire, reserving control to the owning player. If effective fire is possible, units with an auto-fire order automatically fire on enemy units moving or firing within their field of view. Units which automatically engage the enemy may not be able to respond to your direct orders later in the turn.

The Mouse Pointer and Unit Orders

The mouse is your primary means of controlling TANKS! To click on a button or hex, move the pointer to that area of the screen and press a mouse button. In some cases, different mouse buttons have different effects.

The mouse pointer is a very important source of information. Notice that the pointer changes shape as you move it around the screen. Off map, the pointer changes into a pointing finger graphic. Within the map window, it takes one of the following forms:

- **Arrow Pointer:** The map hex under the pointer is not in the field of view of the active unit. (i.e. the active unit can’t “see” the hex under the mouse pointer.) You can only issue non-fire orders if the pointer is shaped like an arrowhead. Left-clicking issues movement orders. Right-clicking on friendly forces selects a new active unit. Only a unit showing the “in communication” flag on the unit icon may be selected as the new active unit.
- **Crosshair Pointer:** The active unit can fire into the hex under the pointer. Left-clicking issues movement orders. Right-clicking tells your unit to fire into the hex. If a small “I” appears next to the crosshair, only indirect fire is possible against the target hex. If a small “S” appears next to the crosshair, only smoke may be fired into the target hex.
- **Empty Crosshair Pointer:** The hex is in the active unit’s field of view, but no fire can be directed into the hex by the active unit. As with the arrow pointer, left-clicking issues movement orders and right-clicking selects a new active unit.

If you move the mouse pointer over a unit, information on the unit appears in the unit information box. You can survey all visible units just by moving the mouse pointer around.

When you issue a fire or move order for a particular hex, you can abort by moving the pointer away from the hex. Clicking again in the hex (any button) will confirm your orders and the unit attempts to move or fire into the hex.

To summarize:

Left-clicking: issues movement orders.

Right-clicking: issues fire orders if a crosshair; otherwise it selects a new active unit.

Field of View

Each unit can see a portion of the map. This is the unit’s field of view. Anything outside of this field of view cannot be seen by the unit. Details of determination of the field of view are given below in Appendix A on page 42. Units may only shoot direct fire at targets within their field of view.

Playing the Game

Game Menus

Info Menu

This menu includes the following items: TANKS!, Equipment, Formations, Air Assets, and Free Memory.

TANKS!: displays version, copyright, and credit information.

Equipment: brings up two lists of equipment, one for each side. Current and original figures are given (current/original) for each item of equipment present in the current scenario. At the bottom of the screen two displays show information on opposing types of equipment. You can compare equipment directly by clicking on the small equipment icons in the lists above. This can be very helpful if you are unfamiliar with any of the equipment in the scenario. If you are playing with standard spotting rules, enemy inventory figures are unavailable.

Formations: calls up a list of all formations assigned to the current player, giving the agility, total value, and orders status for each formation, and allowing selection of any given formation to show a detailed order of battle of every unit in the formation.

Air Assets: calls up a display of the number and types of airstrikes available to both players in the current scenario.

Free Memory: shows the amount of free conventional memory available to the program.

Play Menu

This menu includes the following items: End Scenario, Show All Visible, Show Shot Tracers, Show Hex Grid, Show Objectives, Auto-Center Units, Play Sounds, Computer Player.

End Scenario: allows you to immediately end the scenario. Of course, victory conditions set for the scenario may not be valid if the scenario is ended early.

Show Shot Tracer: allows you to control the display of shot tracer graphics on the map. If “on”, tracers will show the line of fire from shooting units to target units.

Show Hex Grid: allows you to control the display of an overlaid hexagonal map grid.

Show Objectives: turns the display of national flags in objective hexes on or off.

Auto Center Units: turns auto centering of units on or off. If on, new units off map are automatically centered. If off, units are only centered if you left-click within the active unit's info box.

Play Sounds: turns game sound effects on or off.

Computer Player: allows you to select which side, if any, the computer player controls. You can swap sides with the computer from here. You can even tell the computer to play against itself.

File Menu

This menu gives access to various file related operations:

Start New Scenario: begins a new scenario or restarts a saved game without exiting the program.

Save This Scenario: saves the current game for later play.

Exit From TANKS!: quits game program and returns to operating system (DOS, Windows, OS/2, or whatever else you may be using).

Go To Editor: exits the game and enters the editor.

Other Game Controls

Below the menu bar is a window of the game map. It shows an area of 12 x 14 hexes. To the right is a control panel. Below the control panel are the unit information box, other units box, formation control box, and microview box. See Appendix B on page 45 for examples.

The Map Window

Click anywhere within the map window to issue fire or movement orders or to get information on the contents of a hex. See “The Mouse Pointer and Unit Orders” section on page 9 for details.

Controlling the Map Window

The map window may be scrolled by use of the control panel, or by moving the mouse pointer to the edge of the game screen. The double arrow buttons in the control panel scroll by one full screen width. Single arrow buttons scroll the map by one hex. Holding down the left mouse button causes repeated scrolling — you don't need to click the mouse button for each scroll.

The central map button calls up the overview display, showing the entire map on a scale halfway between that of the map window and the microview. The objective hexes for the current scenario are shown on this map as small national flags. Known units are shown as arrow symbols.

Information Buttons

There are five information buttons in the control panel:

- The Silhouettes button invokes the large silhouette display. Large equipment silhouettes are displayed for each unit on the map. Use this to locate specific equipment on the battlefield. Click or move the mouse to exit.
- The Lift Units tank button removes the unit icons from the map to allow unobstructed viewing of terrain. The units are restored to the map when you click or move the mouse.
- The Environment button calls up a quick description of the physical environment of the scenario. Lighting conditions, precipitation, ground condition, and wind are described.
- The Report button gives a quick rundown on game control options currently in effect as well as information on who's winning the scenario and campaign. Check this report at the very beginning of each scenario.
- The Field of View button temporarily shows a view of the battlefield from the active unit's perspective.

The Undo Button

An eraser button allows you to undo most movement or fire orders. You can use this to correct errors or to “cheat”. If you are playing a two-player game, you might want to come to an agreement as to the use of the “Undo” button.

The Unit Information Box

Below the control panel is the unit information box where the active unit is described. You can change this unit's facing and mount/dismount status, center the unit on the map window, change its fire discipline orders, or request a complete report on it.

At the top of the box, you see the unit's name and fire status. If the unit can fire weapons, a red light appears next to the unit name. Below the unit name are pictures of equipment assigned to the unit. A number on each picture indicates the number of that type of system assigned to the unit. If the unit is running short on ammo, a triangular caution symbol appears to the left of the affected equipment. It is a good idea to check the full report by right-clicking on the unit info box for detailed ammo levels if you see a low ammo warning. Below the equipment pictures is a quick description of the unit's current capabilities. Again, if you need more details check the full unit report.

If a wheel button appears, click on it to change the unit's mount status. If the transporter appears first (at the top of the box) in such a unit, the unit is considered mounted.

You can step through all units in the active formation by using the “+” and “-” buttons. If auto-centering is on, the screen centers on each new unit if it is off screen when selected.

You can change the unit's fire discipline orders by clicking on the “hold fire/auto fire” button.

If your unit is on a map edge, an additional button may appear just above the information box. This button is labeled “Flee” or “Exit”. You can flee from any map edge hex, but you can only exit from map edge hexes within two hexes of any objective hex labeled “EXIT”. Click on this button to move the unit off the map edge and out of play. If the unit flees, no victory points will be awarded or lost. If the unit exits, it is considered to have advanced off the map and victory points are awarded. See the “Victory Conditions” section on page 41 for details. Units may only flee or exit if they have not already moved this turn.

You may left-click anywhere else within the unit information box to center on the unit. If you right-click, a detailed unit report appears.

The Other Units Box

Below the unit information box is a small box showing names of other units in the hex, if any. If units are in communication, you can select one of the buttons to change from the current unit to the unit named on the button (left-click) or display a full report on that unit (right-click).

There is a button near the bottom of the unit display that reads either “unit orders”, “stack orders”, or “formation orders”. When the button shows “unit orders”, only the topmost unit of the hex is affected by your orders. When the button shows “stack orders”, the entire stack is affected by your orders: i.e. the entire stack may be rotated in facing, or mounted/dismounted, etc. If the button shows “formation orders”, your orders affect every unit in the active formation. You can change an order's scope by clicking on this button.

The Formation Control Box

At the bottom of the control column is the formation control box. The buttons in this box depend on your pre-game selection of command rules:

Standard command rules: “Next formation” goes to the next higher numbered formation. “I'm finished” turns control over to the other player. “This formation” brings up a detailed display of the active formation.

Advanced command rules: “Next formation” goes to the next formation, which may or may not belong to you. “This formation” brings up a detailed display of the active formation.

Game Mechanics or What Does What and Why

Sequence of Play

TANKS! game play proceeds in turns. On any given turn, both players are given the option of issuing orders to most or all of their units. Before any player actions are allowed, several things happen at the beginning of each turn.

- Any available reinforcements enter the map, if possible.
- All units attempt to gather intelligence on the terrain in their immediate vicinity.
- Units with very little equipment left (due to losses) may be merged with other similarly equipped units in their hex. This happens automatically if the units are stacked.

Saving Games

While you can always save a game using the Save This Scenario section of the File menu, this usually isn't necessary. At the beginning of each turn or whenever you exit a game in progress, your game is automatically saved as CAMPAIGN.SAV.

Air Strikes

In some scenarios, one or both players may be able to call airstrikes to enemy positions at the beginning of each turn. Since scenarios may be set in several historical periods, the actual capabilities of airstrikes vary from scenario to scenario. Airstrikes become more effective and controllable in later historical periods.

In any particular scenario, the number of strikes available, level of player control, and types of airstrikes may be checked by using the Air Assets section of the Info menu.

You may have “no control”, “partial control”, or “full control”. If you have no control over your airstrikes, they wander in and automatically pick targets to attack. If you have partial control over your airstrikes, you have the option of letting the computer pick targets or selecting them yourself. Full player control is similar to partial control, with the added ability to save strikes for later turns (loiter).

If you are playing with the standard command rules, airstrikes are always computer-controlled. You only have partial or full control of your airstrikes if you are playing with advanced command rules.

There are four types of airstrikes: Light prop, heavy prop, light jet, and heavy jet. Lethality ranges from roughly that of a light artillery (75mm) battery for a light prop strike to a super heavy artillery battery (200mm+) for heavy jets. Strike lethality is proportional to current visibility conditions. Strikes are more effective in daylight with clear skies than at night with cloudy skies.

If an airstrike is allowed to pick its own target, it tries to find a high value enemy target. It is not necessary for this target to be visible to you.

If you choose a target hex for an airstrike, the strike searches the map in the immediate vicinity of the chosen hex. The strike is launched at the chosen hex if something is there to hit, but nearby high value targets may be hit instead. You don't have to be able to see or “spot” the target hex. Any hex may be selected as a target. If nothing is in the chosen hex, the strike will search for and attack the nearest high value target.

Regardless of the method of target selection, there is a 2% chance that a mistake is made and a nearby occupied hex will be attacked instead. This can result in attacks on friendly units. You can limit the chance for this kind of friendly fire incident by selecting target hexes far from friendly forces.

If you order a strike to loiter, all remaining strikes are saved for use on a later turn.

Once a target is selected, the airstrike begins an attack run on the target from about eight hexes out. As the aircraft move toward the target they may be fired upon by enemy units with anti-aircraft capability. It is possible for the strike to be shot down (possibly smoking the hex) or disrupted.

If the strike survives the run to the target, it attacks the target with roughly the effectiveness of an artillery battery shooting an indirect fire mission.

Command Rules

What happens next depends on whether you use the standard or advanced command rules.

Standard Command Rules

Skip this section if you are going to play using the advanced command rules. We strongly recommend that you play your first games with the standard command rules described here, as they greatly simplify play.

The side with better overall morale, movement, and control ratings is allowed to issue orders first. Low morale formations may be “reorganizing”, and unavailable for orders during the turn. Late in a scenario, after heavy losses have been taken, it is possible for a significant portion of your forces to be unavailable for orders.

When you are finished giving orders to your units, click on the “I’m finished” button to turn control over to the other player.

Advanced Command Rules

If you are using the standard command rules, skip to “Giving Orders” on the next page.

All formations on both sides are ranked in order of “agility” plus a small random factor. A formation’s agility is the sum of its morale, control, supply, and average movement allowance of all units assigned to the formation. For this purpose, unit movement allowances are based on their current mount status. Formations with most units “mounted” at the beginning of the turn tend to have a higher agility.

Beginning with the highest ranked formation, you are offered the chance to issue orders to one formation at a time. This is called the “active formation”.

You can issue orders to units assigned to the active formation. Only these units are considered to be “in communication”. Other units may be examined, but are unavailable for orders. When you are finished with the active formation, click on the “next formation” button at the bottom right corner of the screen. A dialog box opens up and you have the choice of accepting or deferring orders.

If you select “accept orders”, you tell the program that you are finished with the formation for this turn.

If you think you might want to come back to the formation at some later point in the same turn, select “defer orders”. This tells the program to go to the next formation for now, but bring this formation back up again before the end of the turn. You can do this even if you have given orders to some or all units assigned to the formation. There is a chance, based upon the control rating of the formation, that the formation will instead be passed over (“out of contact”) for the turn and you will not be given another opportunity to issue orders to this formation. Formations with low control ratings are more likely to be passed over. Formations with more than half of their units on road hexes can always be deferred with no chance of being passed over.

If a formation has low morale at the beginning of the turn, there is a chance that it is unavailable for orders. These formations are said to be “reorganizing”. They attempt to raise their morale in order to be available for orders in the future. While reorganizing, all units assigned to the formation are issued “auto” fire discipline orders by the computer.

You can monitor the orders status of a formation by use of the Formation section of the Info menu item.

Giving Orders

You can issue orders to any unit that is in communication with you. Right-click on any icon with an “in communication” flag to choose it as the active unit.

Mount, dismount, and fire discipline orders are issued by clicking on buttons in the unit info box on the right side of the screen. See “The Unit Information Box” on page 13 for details.

Movement and Fire orders are issued by clicking on the map window. See “The Mouse Pointer and Unit Orders” on page 9 for details.

Moving Your Units

If you order a unit to move to a non-adjacent hex, it attempts to find the “best path” and move towards the selected hex. After you left-click on the destination hex, the program displays the path that the unit(s) will use to move to their objective. Click again in the hex to confirm the order to move along this path. You can always abort a move by moving the mouse pointer before confirming the order.

A unit with “auto-fire” orders may stop moving to fire on enemy units coming within effective range of its weapons.

If a unit takes losses from enemy fire while moving it stops. You can re-issue orders if the unit has not exhausted its available movement points.

Firing a unit can use movement points. Low rate of fire weapons use more movement points per shot than high rate of fire weapons.

No more than three units may occupy a hex at any time.

If you order a unit to enter a mined hex, each piece of equipment has a 33% chance of being destroyed. For each piece of equipment destroyed, there is a 5% chance that the minefield becomes depleted (and removed from the map).

When an armored unit enters a hex with abatis (felled trees, barbed wire, or other obstacles), there is a chance that the abatis will be destroyed and removed from the map. This is more likely to happen if the moving unit is heavily armored.

Enemy-occupied hexes may not be entered. If you order a unit to enter an enemy-occupied hex, one of two things happen:

- If you order a unit to enter an adjacent enemy-occupied hex, your unit attempts an assault of the hex. See the Close Assault rules below.
- If you order a unit to enter a non-adjacent enemy-occupied hex, your unit moves until it is adjacent to the enemy hex then stops. If you wish to order an assault, issue another order to enter the hex and watch the sparks fly.

Different terrain types have varying entry costs. All hexes are easier to enter by road.

There are limits on entry and exits to and from escarpment hexes. Generally, you can't run a unit over a cliff....

Water affects units differently, based on the flight, amphibious, and fording capabilities of equipment assigned to the unit.

Table of Movement Costs

TERRAIN	COST TO ENTER
Town	2
River/Lake	4 (amphibious units)
River/Lake	n/a (non-amphibious units)
Other terrain	3 (firm ground)
Other terrain	4 (soft ground)
Marsh	+2
Plowed Field	+1
Wadi	+1
Frozen Stream	+1
Stream	+2 (units with fording capability)
Stream	n/a (units without fording capability)
Dense Woods	+1
Mines	+1 (also negates roads)
Abatis	+1 (also negates roads)
Fortification	+1
Change of elevation	x2 (see below)
Roadbound Units	+2

Special cases:

- Enemy-occupied hexes: no unit may enter an enemy-occupied hex under any circumstances. Attempts to force entry into an enemy-occupied hex results in a close assault.

- Change of elevation: there can be as many as three different terrain elevations on a map: level 1 (the lowest), level 2 (the middle altitude), and level 3 (the highest). These levels are color-coded from dark (low) to light (high).

Whenever any unit moves from one hex to another with a different elevation, the normal movement cost for the move is doubled. This affects even helicopter units.

- Escarpments: escarpment hexes may not be entered by units from lower elevations. Units may not exit from an escarpment hex to a hex with a lower elevation.
- Roads: if the moving unit moves through a hex side that is crossed by a road, the road movement cost overrides all other terrain types unless the hex contains mines, abatis, or an enemy unit.

Paved Road 1

Unpaved Road 1 (usually)

Unpaved Road 2 (road-bound units and soft ground condition)

- Helicopter units: helicopter units pay 1 point to enter any type of terrain, except for enemy-occupied hexes or hexes already containing three friendly units. Helicopter units are unaffected by mines or abatis.

Firing Your Weapons

Units can fire at enemy units either as a result of direct orders, or at the discretion of local commanders if the unit has auto-fire orders.

Auto-fire

As units are moved or ordered to fire, they are subject to direct fire from enemy units with auto-fire orders. Generally speaking, this occurs at the same time that the enemy unit is seen by the moving unit. In modern scenarios, disparities in optical equipment can lead to situations where your unit can be fired upon by units that it can't see. Auto-fire is treated as normal direct fire, described below.

Only units with a direct fire capability execute auto-fire. Units only auto-fire at enemies within effective weapons range.

Direct Fire

Direct fire is exactly what it sounds like; your troops see a target and lob unpleasant things at it.

When you order a unit to fire on an enemy-occupied hex, the program determines whether there is any chance that the ordered fire is effective. If direct fire has no chance of causing damage to enemy units in the hex, nothing happens; otherwise, the following chain of events are set in motion.

The effectiveness of the fire is calculated and displayed at the bottom of the screen as “lethal”, “effective”, or “weak”. Lethal fire is almost guaranteed to kill something. Effective fire will probably score a few hits. If standard ammo rules are in effect, weak fire may not be worth shooting unless you’re going to lose the unit anyway.

Direct fire is prohibited from river or lake hexes, except from helicopter units.

If you aren’t interested in the gruesome details of direct fire calculations, you might want to skip to the section on “Indirect Fire”, below.

Every possible effective weapon assigned to transport or dismount equipment within the active unit separately fires at the top unit in the enemy hex. (The firing player can freely rearrange the stacking order in the target hex by repeatedly right-clicking the hex.) Each weapon is checked for ammunition depletion and a movement cost may be paid by each firing unit. Fire will first be directed at any vehicles in the target unit, then at any dismounted non-vehicle equipment types. The number of hits for each weapon type and target is tallied. Each shot is handled separately.

Each shot has a chance to hit the target. This chance is based on the firing weapon’s basic chance to hit at range, the presence of woods, berms, towns, or smoke in the target hex, and the movement status of firing and target units. The gory micro-details of the hit calculation are given in Appendix A on page 42.

Hits are treated differently depending upon whether the targeted equipment is armored. “Fragile” units are treated as armored, but with zero armor thickness.

Armored equipment (tanks, etc.) are killed if their armor is penetrated. This is unlikely to happen if the armor rating of the target is greater than the hard attack rating of the firing weapon.

The chance to kill unarmored equipment is proportional to the soft attack rating of the shooting weapon. Woods, towns, and forts give some protection from soft attack fire.

More details of kill calculations are given in Appendix A on page 42.

Generally, the movement cost of firing a weapon is equal to the total speed of the firing equipment divided by the rate of fire of the fired weapon. Example: If the equipment has a rate of fire of 3 and a movement rate of 12, the cost of firing one shot from the weapon is 4 movement points. Fractions are rounded up or down randomly. Due to this random rounding, it is sometimes possible for a unit to fire more times in a turn than its specified rate of fire. It is also possible for a unit to fail to meet its specified rate of fire. Generally though, you can count on a unit being able to fire a number of times per turn equal to the rate of fire of its slowest weapon, assuming the unit does not move.

Indirect Fire

Unlike direct fire, indirect fire is lobbed towards a location known to contain enemy forces but not necessarily visible to the firing unit. Because of this, indirect fire is much less lethal than direct fire for almost all weapons, but all enemy equipment in the target hex has a chance of being hit and killed.

Indirect fire may be directed into unspotted road intersections and town hexes. However, the effects of the indirect fire will be diminished. Any other type of hex must be spotted before firing into it.

If the program determines that ordered direct fire is ineffective, it attempts to fire indirectly at the target hex. Not all equipment has an indirect fire capability.

If the firing unit has an indirect fire capability and the target hex is spotted and in range, an indirect fire mission is fired.

There is a chance that an indirect fire mission misses the target hex entirely, hitting an adjacent hex instead. If this happens, it is possible to damage nearby friendly units. The chance for missing the target hex increases with range, and decreases with a good control rating for the firing unit.

Every piece of equipment in the target hex has a chance to be killed. Armored equipment is very resistant to indirect fire. Unarmored equipment is much more vulnerable. The damage in the target hex is proportional to the soft attack rating of all the weapons firing into the hex.

See Appendix A on page 42 for more details of the calculation.

Smoke Fire

Finally, if the target hex contains no enemy units, the program checks to see if the firing equipment has a smoke mission capability. If so, the equipment shoots smoke shells into the target hex. The chance of successfully “smoking” the hex is proportional to the soft attack rating of the firing units. See Appendix A on page 42 for more details.

When a hex is smoked, a smoke graphic appears on the map. Smoke has an effect on fields of view and on the chance of hitting targets in the smoked hex.

Close Assault

If you order an assault on a hex, it is resolved as a series of direct fire attacks and morale checks. Rate of fire limits are ignored. All units on both sides fire until one side runs out of equipment or ammo, or one side panics and retreats. Rate of fire ratings are used to determine the ratio of shots fired. Example: A weapon with a ROF of 4 fires four times to the three shots that is allowed to a weapon with a ROF of 3. Morale checks are based on the morale of the parent formations of the units involved. If any unit fails its morale check, it is destroyed before it can fire.

In close assaults, all fire against armored targets is assumed to be through side armor. Equipment types with the critical facing penalty fire with 1/2 of their normal rate of fire.

Generally speaking, the results of a close assault are dependent on the morale of the units involved. Armored equipment tends to lose part of its advantage over unarmored equipment in close assaults, unless the unarmored equipment panics and retreats.

If helicopters are in the assaulted hex, they retreat one hex to avoid the assault.

Smoke, Fire, and Explosions

An explosion graphic in the target hex indicates a piece of equipment in the hex has been killed. Sometimes, fires can start, causing smoke to rise and interfere with fields of view. If wind conditions are right, smoke can drift across the battlefield.

Some modern armored vehicles are equipped with smoke mortars. If fired upon, these units automatically generate smoke in their own hex in an attempt to decrease the accuracy of enemy fire and to screen following units from enemy view.

Anti-aircraft Fire

Units with anti-aircraft equipment are capable of firing on helicopter units and air strikes. Fire against helicopter units takes place just like any other direct fire. Even though airstrikes cross the map while all units are “inactive”, units with anti-aircraft automatically fire on airstrikes regardless of their fire discipline order. Except for this, anti-aircraft fire is resolved as normal direct fire.

Scenario Environmental Effects

Several environmental variables have strong effects on game play.

- Ground condition affects movement costs for entry into most terrain types. Some units are more affected by soft ground than others. See movement cost table for details.
- There are three levels of lighting. Daylight is the brightest condition. Units and airstrikes can see further in daylight than in other conditions. Visibility is limited in twilight, and very limited for most units at night.
- Precipitation limits the distance that units can see, as well as the ability of air strikes to find their targets. Light precipitation reflects haze, light mist, smoke from large fires, etc. It has limited effect on game play. Heavy precipitation represents rain or snow and has a much more significant effect on game play.
- If the scenario takes place on frozen terrain, streams are treated as dry and rivers are assumed to be frozen. See the “Movement Cost Table” on page 19 for effects.

Battlefield Engineering

Removing Mines and Abatis

At the beginning of each turn, each infantry or engineer unit in a hex containing mines or abatis has a chance of destroying the mines or abatis. For infantry units, this chance is 10%. For engineers, this chance is 25%.

Digging In

Infantry and engineer units which did not move or fire in the previous turn have a chance to “dig in”, creating a fortification in their hex. For infantry, this chance is 5%. Engineers have a 10% chance of digging in.

Hidden Units

Some kinds of equipment are easily hidden in woods and towns. Units equipped entirely with one of the following equipment types begin scenarios hidden if deployed in woods or town hexes.

Rifle Squad
 SMG Squad
 Rifle/RL Squad
 Rifle/HRL Squad
 SMG/RL Squad
 SMG/HRL Squad
 Assault Squad
 Assault/R Squad
 Assault/A Squad
 Assault/B Squad
 Lt. Rifle Squad
 Engineer Squad
 HMG
 ZPU-4 AA Gun
 75mm Recoiless
 37mm Inf Gun
 45mm Mortar
 50mm Mortar
 58mm Mortar
 60mm Mortar
 90mm Mortar

Note that no vehicles can be hidden.

Hidden units cannot be seen by enemy units more than one hex away. Airstrikes can find hidden units, but attack at lowered effectiveness.

It's difficult for a unit to keep its hidden status. The following actions can cause units to lose their hidden status.

- The hidden unit moves.
- Any unit enters the hex containing the hidden unit.
- Any unit fires from the hex containing the hidden unit.
- Any enemy unit moves to a hex adjacent to the hidden unit.

If a unit is hidden, the word “hidden” appears in the unit information box. Hidden units do not auto-fire at targets more than one hex away.

Reinforcements

Some units may begin the scenario off the map. They will remain off map until their scheduled entry turn begins, then attempt to enter the map near their scheduled entry hex.

Units may only enter the map if there is room for them. If the entry hex is filled, adjacent hexes are tried. Units must enter on a map edge within three hexes of their scheduled entry hex. This puts a practical limit of 21 units that can enter at a given entry hex on any given turn.

If for any reason the units can not enter the map, the program keeps trying to enter them on each successive turn until the scenario ends.

If you examine the Formations section of the Info menu item, you see which formations are currently deployed on the map and which are waiting off map to reinforce you.

Intelligence Gathering

Each unit on the map can see enemy forces within a certain distance. The area seen by a unit is called its “field of view”.

When a unit checks its field of view, it looks in all directions to a distance determined by environmental conditions and the unit's movement status and equipment.

Generally speaking, units see further in daylight and clear weather than they do at night or in rainy weather. Units see further if they are not moving.

Anything outside the field of view radius of a unit cannot be seen by the unit. Terrain between the unit and a hex can block the unit's field of view. Higher terrain, towns, woods, and smoke block vision. Helicopter units can see and be seen a little better than other units.

See Appendix A on page 42 for details of the field of view calculation.

At the beginning of each turn, all units check their fields of view. All enemy units in hexes seen by a friendly unit are “spotted” if your unit meets one of the following conditions:

- Your unit is assigned to a formation with a control rating of 6 or better.
- Your unit is “static” and is assigned to a formation with a control rating of 4 or better.

As units move, they may see new hexes. These new hexes are shown as your unit moves. Other units will not be informed of the contents of the newly-seen hexes unless your unit has an effective control rating of at

least 7. The effective control rating of a unit is dependent upon the control rating of the formation to which it is assigned, as well as the current movement status of the unit. Units have a higher effective control rating if they have not moved. For more details see Appendix A beginning on page 42. **IMPORTANT:** It is possible for a moving unit to “see” an enemy unit within its field of view without being able to report the enemy unit as “spotted”. If this happens, you’ll know the enemy unit is there but you won’t be able to target the unit for indirect fire.

Unit Merging

At the beginning of each turn, the program checks to see if any under-strength (only one piece of equipment assigned) units are on the map. Under-strength units stacked with similarly equipped units, are removed from the map after transferring their equipment to the other unit in the hex.

Land Lines and Static Units

At the beginning of each scenario, all units are considered to be “static”. A static unit is in direct physical communication with its chain of command via messenger and land telephone lines, and its location is known precisely. Static units have a chance of being resupplied on the battlefield, and in early scenarios, the “static” status increases the unit’s ability to report hexes as “spotted”, for indirect fire.

When you move a unit, it loses the advantages of being static. Battlefield resupply is no longer possible, and in many cases it is difficult for the unit to spot hexes.

On any turn in which a unit does not move or fire, there is a 10% chance that the unit’s static status is restored.

Battlefield Resupply

If you are playing with standard ammo supply rules, your units can run low on ammo during a scenario. In some cases, your units may receive new supplies of ammo.

Only “static” units which did not move or fire in the previous turn can receive battlefield resupply. The chance for resupply is equal to (formation morale x formation supply x formation control) / (1000 (day) or 1500 (twilight) or 3000 (night)).

Example: A static unit in a formation with control of 7, supply of 8, and morale of 5 would have the following chances of resupply:

$$\text{day: } 7 \cdot 8 \cdot 5 / 1000 = 0.28 \text{ or } 28\%$$

$$\text{twilight: } 7 \cdot 8 \cdot 5 / 1500 = 0.19 \text{ or } 19\%$$

$$\text{night: } 7 \cdot 8 \cdot 5 / 3000 = 0.09 \text{ or } 9\%$$

Resupplied units have their ammo levels restored to the maximum for each weapon type.

Scenarios

Victory Conditions

In a nutshell, TANKS! is a very sophisticated version of the children’s “Capture the Flag” game. In order to win you must control as many objective (flag) hexes as possible, while limiting your losses and inflicting maximum losses on the enemy.

Each scenario has its own specific victory conditions based on the location, number, and values of objective hexes. You should check the overview map and scroll the map window around to familiarize yourself with the locations of all objective hexes before issuing unit orders on your first game turn.

Equipment losses - Based on unit values.

Each piece of equipment in the game has a value that depends upon its combat and movement characteristics. Each piece of equipment lost contributes to the total victory point calculation of the scenario. Victory points for lost equipment are scaled so that the weaker force will be awarded more points than the stronger force for killing enemy equipment.

Terrain objectives - Based on formation objectives and units advanced off map.

Objectives are shown in the map window as national flags, the nature of which indicates who controls each objective. Each objective has a victory point value. If you click on an objective hex, the value appears at the bottom of the screen. Objectives on map edges have a special characteristic. If the word “EXIT” appears in the objective hex, you can advance your units off the map edge within two hexes of the objective for additional victory points. Each advanced unit is worth 20% of its unit value in additional victory points. Note that the “EXIT” button only appears if you control all objectives on the map.

There are three levels of victory: Debatable, Notable, and Brilliant. A debatable victory is almost indistinguishable from a draw. If losses are high, a debatable victory is reported as a “Pyrrhic” victory.

End of Scenario

A scenario will end when one of the following conditions has been met:

- All units on one side have deserted or been destroyed. If this happens, all objectives become controlled by the surviving force.
- All formations on both sides are unavailable for orders due to loss of command control. If this happens, you are notified that both sides must disengage due to poor morale.
- The final turn of the scenario has been completed.
- A player has requested an end to the scenario.

Campaigns

How To Play a Campaign

Whenever you begin a new scenario, you start a new campaign. While each scenario stands alone as a separate game, you always have the option of continuing the game as a series of connected scenarios based on the results of previous scenarios.

If you choose the “Play Next Game” button at the beginning of a session, you play the next scenario in the current campaign. If you want to continue a campaign from a saved game, you must choose the saved game named CAMPAIGN from the saved games list.

Continuity

The victorious force continues from one scenario to the next in a campaign. Roughly 70% of the victor's losses are replaced at the beginning of each new scenario, and each surviving formation has a 30% chance to increase its morale over its original figure. The loser of the previous scenario gets an entirely new force.

Ending a Campaign

When the campaign begins, the program calculates a victory point total needed to win the campaign. Until this total is reached by a player and one player has a higher total than the other, the campaign continues from scenario to scenario. It is, of course, possible to win a campaign even if you lose one or more scenarios.

THE EDITOR

The editor is intended to give you complete control over creation or modification of scenarios for TANKS!. This is the same tool used to design the standard scenarios that come with the game.

“Paint-like” functions allow rapid creation and modification of maps. These include automatic line drawing, floodfill, and automatic contour fitting tools. Three sets of terrain tiles are available for you to select from: temperate, arid, and frozen. Some scenario terrain effects vary with the tileset used.

You can choose forces by nationality and historical period. It is possible to mix periods allowing, for example, a 1973 Israeli mechanized brigade to be pitted against a 1943 German panzer division. Individual units are chosen in a structured environment to build up companies, battalions, etc.

Basic Concepts

What is a Tile?

A tile is a one hexagon (hex) representation of a terrain type. It has a specific graphic appearance and a set of game characteristics. You build maps up by arranging tiles in a hexagonal grid. Some tiles are opaque, base terrain types. Others are transparent, and are superimposed on opaque tiles to create complex terrain types. The tiles available for your use are grouped into three distinct tilesets (temperate, arid, and frozen) representing different environments.

What is a Map?

Does this seem like a strange question? Most of us know what a map is. But in game terms, a map is a three-dimensional hexagonal grid of locations. Each location (hex) has a specific terrain tile or tiles that define the game characteristics of that location.

What is an Order of Battle?

The order of battle is a complete list of all units and formations belonging to both players in any given scenario. The editor allows you to build, modify, and save orders of battle.

Starting the Editor

You can enter the editor at any time by selecting the Go to Editor section of the File menu.

We suggest you familiarize yourself with both the game and the editor sections of the game manual before trying to use the editor.

Using the Editor

Editor Menus

At the top of the screen is a menu bar, which includes the following choices:

Info Menu

This menu is the same as the game Info menu.

Edit Menu

This menu includes the following items: Edit Map, Edit Order of Battle, Edit Unit Deployment, Random Map, Random Deployment, Change Tileset, Calculate Possession, Show All Visible, Show Hex Grid.

Edit Map: selects the map editing screen. Use this if you want to change the map.

Edit Order of Battle: calls up the screens you use to create or modify an existing order of battle.

Edit Unit Deployment: selects the unit deployment screen. Use this to change where units are placed on the map.

Set Map Size: allows you to choose the size and shape of the map.

Create Random Map: order the program to create a random map.

Clear Map: sets all terrain on the map to level 1 open tiles.

Remove All Units: removes all units from the map.

Random Deployment: orders the program to randomly deploy all units, give formation orders, construct fortifications, and select objectives for a scenario.

Change Tileset: allows you to pick a new tileset (temperate, arid, or frozen).

Calculate Possession: performs a calculation of terrain possession (who owns what), and displays the results.

Show All Visible: allows you to control the display of possession symbols on the map. If “on”, every hex on the map shows a small crosshair graphic. The color of the graphic (blue or red) indicates current ownership of the hex.

Show Hex Grid: allows you to control the display of an overlaid hexagonal map grid.

File Menu

This menu gives access to various file related operations:

Load Map: loads an existing map.

Load Order of Battle: loads an existing order of battle file.

Load Scenario: loads an existing scenario file.

Save Map: saves the current map as a file.

Save Order of Battle: saves the current order of battle as a file.

Save Scenario: saves the current map and order of battle as a scenario file.

Go To Game: exits from the editor and enters the game.

Exit From TANKS!: quits the editor program and returns to the operating system (DOS, Windows, OS/2 or whatever else you may be using).

Other Editor Controls

Below the menu bar is a window onto the game map. It shows an area of 12 x 14 hexes. To the right is a control panel. Below the control panel you find a microview map and one of two sets of auxiliary controls.

On the map editing screen, the tile selection panel and information buttons allow you to select tiles for use in building a map.

On the unit deployment screen you find the unit information box, other units box, formation control box, and microview box. These controls work very much like those in the game.

The Map Window

You can click anywhere within the map window to change or get information on the contents of a hex. Unlike the game, the editor does not give any information on units unless you click on them. See the “Map Editor Screen Controls” and “Unit Deployment Screen Controls” sections on page 33 and 34 for more information.

Controlling the Map Window

The map window is controlled just as it is in the game.

Map Editor Screen Controls

Map Editor Control Panel Buttons

There are two information buttons in the control panel:

- The Environment button calls up a quick description of the scenario's physical environment. It describes lighting conditions, precipitation, ground condition, and wind. You can modify the scenario environment by clicking on buttons in the information display.
- The Report button gives a quick rundown on current editor information.

There are four drawing tool buttons in the control panel.

- The Line Drawing button selects between line and point map drawing modes. If line drawing is selected, a line of the current tile is drawn from the last selected hex to any newly selected hex on the map. If line drawing is “off”, any map changes affect only one hex.
- The Auto-Fill button controls the auto-fill mode of the editor. If auto-fill is “off”, map changes affect only one hex. If auto-fill is “on”, any map changes fill all map hexes of the same type to match the original tile in the selected hex until a boundary of a different tile is encountered.
- The Auto-Contour button controls the automatic contouring feature. Most terrain tiles are available in a number of different shapes designed to fit smoothly together on the map. If you make a change while auto-contouring is “off”, the current tile is drawn on the map. If auto-contouring is “on”, the editor tries to pick new tiles to smoothly contour your map change.
- The “Undo” button (the eraser) cancels the last change that you have made to the map.

Map Editor Tile Controls

Immediately below the control panel is a box showing the current tile. Click on this box with any mouse button to get information on the current tile.

Below the current tile box is the tile selection box. You can scroll through the tiles available in the current tileset by clicking on the “tiles>” and “tiles<” buttons. Select a new current tile type by clicking on any tile within the tile selection box. Some tiles are shown on a black background. These are “transparent” tiles and are used to overlay normal opaque tiles to create complex terrain types. For example, roads are transparent tiles. A special eraser tile can be used to erase any transparent tiles from the map.

Unit Deployment Screen Controls

Unit Deployment Control Panel Buttons

There are six information buttons in the control panel. With the following exceptions, these buttons work as they do in the game.

- The Objective Value Set button allows you to assign specific values to objectives. If you click on this button while the map cursor is on a hex with an objective in it, you see a list of choices of values for this objective. You only need to do this if you don't want to use the standard calculated objective values. See the “Victory Conditions” section on page 41.
- The Environment button calls up a quick description of the physical environment of the scenario. Modify the environment by clicking on buttons in the information display.
- The Report button gives a quick rundown on current editor information, including the number of units currently placed on the map.
- The “Undo” button cancels the last change to the map or units.

Unit deployment Controls

Below the control panel you find the unit information box, other units box, and formation control box. Generally, these work as in the game. The unit information box works exactly as in the game, with the following exception: The game fire discipline orders button has been replaced with a “get unit/put unit/reinforce” button. Click on this button until it shows the selection you want. In any of the following cases, the center button on a three-button mouse does the opposite of the current “put” or “get” selection.

If this button shows “get unit”, you remove a unit from the map when you left-click on it. Clicking on an empty hex does nothing. The “get unit” option is only available if the active unit is on the map.

If the button shows “put unit” and the active unit is off map, the unit is placed in any map hex you select with a left-click (within rules limits). Left-clicking on a hex will instead assign or remove a formation objective if the active unit is already on the map.

If the button shows “reinforce”, a left-click places formation objectives on the map. The first objective must be on a map edge. This is the entry hex for the formation when it arrives as reinforcements during a scenario. The “reinforce” option is available if the active unit is off map.

Center-clicks with a three-button mouse do the opposite of the current “put” or “get” selection.

The other units' box works exactly as it does in the game.

The formation control box shows the following buttons: "This Formation", "Next Formation", "Last Formation", and "Change Sides". As in the game, "This Formation" calls up a display of the current formation. "Next Formation" moves on to the next available formation. "Last Formation" moves back to the previous formation. "Change Sides" switches between the red and blue force.

Creating a Scenario

Suggested Creation Sequence

Scenarios can be created by mixing the order of battle file and map files, or by creating new maps and orders of battle. The editor is very flexible, and the order in which you create these things is up to you. However, the *easiest* way to create a scenario from scratch is:

- 1) Draw or load a map first. This is done from the map editing screen, the first screen you see when you enter the editor.
- 2) Make up or load an order of battle by using the Edit Order of Battle selection of the Edit menu.
- 3) Place all of the units in the order of battle on the map and set orders and objectives for all formations by using the Edit Unit Deployment selection of the Edit menu.
- 4) Set the scenario environment.
- 5) Save the scenario file.

Steps 1, 2, and 3 above can all be done automatically for you by the editor. Simply use the random map, random order of battle and/or random deployment features to save time.

Create the Map - The Map Editing Screen

This is by far the most complicated part of the editor program. A selection of map files has been included for your use in making up scenarios of your own. If none of these maps meet your needs for a particular scenario, you can create your own, or have the computer generate a random one.

Tilesets

First choose the tileset you want to use for your map. There are three possible choices: temperate, arid, and frozen. In addition to the obvious differences in the colors used, the tileset also affects some terrain effects on movement and combat in your scenario.

- The temperate tileset is the most restrictive; it includes rivers, lakes, and small streams that can all place significant limits on movement across your map.
- The arid tileset is similar, except that the stream tiles of the temperate set are replaced by "wadi" tiles. Wadis are dry streams, which slightly restrict movement but provide significant protection for units.
- The frozen tileset differs from other sets primarily in that all water tiles (streams, lakes, and rivers) are considered to be frozen, and for the most part, are treated exactly like open terrain.

Drawing the Map - Placing Tiles

Tile and tool selection buttons are described above in the "Map Editor Screen Controls" section on page 33.

Unless you have loaded or requested a random map, the map shown on the editing screen is blank. There are a few small variations in the open terrain tiles on the blank map, but these have no effect on game play.

Drawing a map is a matter of picking tiles from the tile selection box to the right of the map window and left-clicking in the map window to place the tiles onto the map.

Right-clicking on any hex in the map window identifies the terrain type placed there.

You can pick individual tiles from the tile selection box and place them manually, one by one, to create the map. This is simple, but with 3600 hexes on a full size map, for instance, it could take considerable time. In order to save time, a number of map drawing tools are provided.

There is a wide variety of tiles for the most common terrain types. This allows creation of smoothly contoured terrain shapes, but is also makes manual selection of tiles fairly complicated. You can simplify your drawing task by turning the auto-contouring feature on. If auto-contouring is on, the editor tries to pick the most appropriate similar tile whenever you drop a tile onto the map. For example, if you drop any level 2 (medium elevation) tile on the map it probably looks a bit out of place. But, if you drop two more tiles in a tight (touching) triangular pattern the editor slightly changes the tiles you dropped to smoothly contour the shape you've drawn on the map. This auto-contouring feature is the most commonly used map editing tool.

There are times when you want to draw large terrain features. Rather than dropping tiles one by one, you can turn automatic line drawing "on". When auto-line drawing is on, the editor drops a line of the current tile

across the map from the last hex you selected to any hex that you left-click on the map. Auto-line drawing is usually used in conjunction with auto-contouring. If both features are on, the line is also auto-contoured as it is drawn. This is the easiest way to draw roads, streams or rivers.

Finally, rather than manually filling in large terrain features you can have the editor fill them automatically. In order to create a large, filled feature you need to outline the feature (most easily done with auto-line drawing on), turn auto-fill on and click anywhere within the outline you have drawn. The outlined area fills with the current tile. If auto-contouring is also on, the outlined area fills then automatically contours itself.

The drawing tools are very powerful, and if you have no experience with “paint” programs they may seem complicated, but experience makes them easy and natural to use.

Each of the drawing tools has limitations, primarily due to restrictions of the tilesets. Some of the choices made by the tools may be wrong for your map. This is particularly true where roads, streams, or wadis intersect. If the choice is close to what you want, you can leave it and patch it up manually later. If the automatic drawing tool does something damaging to your map, use the “Undo” button to restore your map and try another way to create whatever you want to draw.

Once you’ve drawn a rough map, you may want to go back to a completely manual tile mode (line drawing, auto-contouring, and auto-fill modes all “off”) and carefully polish the map by hand.

Since map drawing can take considerable time, you should save the map from time to time using the Save Map selection of the File menu.

Create the Order of Battle

Select the Edit Order of Battle item from the Edit menu. This allows you to load an old order of battle, modify the current order of battle (if one is loaded), or create a completely new order of battle.

New and Old Orders of Battle

If you choose to create a new order of battle, the editor gives you the force and historical period selection screen. There are twelve historical periods, each with a selection of forces available for the period. Click on the flag buttons to make force selections. You can freely mix forces and periods — although the program enforces some rarely encountered limits on force matching. (For example, due to the large databases involved, you cannot create a 1944 Germans vs. Germans scenario.)

Once you have selected the forces you want, click on the “Accept Forces” button and the program goes to the order of battle editing screen.

The Order of Battle Editing Screen

In the upper left corner of the screen is the available units box. This box contains all the standard unit templates available to one player. You can scroll through the templates by clicking on the arrow buttons at the top and bottom of the scroll bar on the right side of the box. Right-clicking on any template calls up a detailed report on it. Left-clicking on a template creates a new unit, based on the template, and assigns it to the current formation. The new unit appears in the current formation box in the upper right corner of the screen.

The current formation box shows all of the units assigned to the current formation. You can scroll through the units in the formation with the arrow buttons at the top and bottom of the scroll bar on the right side of the box. Right-clicking on a unit calls up a detailed report on the unit. Left-clicking on the unit deletes the unit from the formation.

Below the current formation box is a group of four controls labeled: morale, control, supply, and equipment. These controls reflect the general characteristics of the formation and are initially set to national standards for the chosen historical period. You can change these values if you wish. For example, many forces historically equipped certain elite units better than their regular units. You may also wish to create units that are under strength in order to reflect losses that occurred before your scenario begins. In any case, the formation values are specific to each formation. This allows you to create very high quality formations and very poor formations in the same order of battle.

- The morale and control values affect the usefulness of units in the formation.
- Supply and equipment values are expressed in tenths. Example: Setting a value to 7 would modify your units to 70% of template values. The supply value modifies starting ammo levels for units. The equipment value modifies the amount of equipment assigned to newly created units. There is also a small random factor involved upon the creation of units that has slight, hidden effects for these values.

You can directly set the level of equipment assigned to any particular unit by clicking on the small up and down arrow buttons in each unit box. You can also strip transport from a unit by clicking on the image of the transport in the unit box.

There are three buttons in the center of the screen: “Switch Sides”, “New History”, and “Random Forces”. “Switch Sides” changes from one player force to the other. “New History” allows you to select new forces and historical periods. “Random Forces” creates an order of battle randomly from the units available.

The next and last formation buttons below the current formation box are used to cycle through all of the formations.

The air support buttons below the available units box are used to select the number of air strikes available to each player force. “Some” air strikes gives the force from zero to three strikes per turn. “Many” air strikes gives the force from zero to six strikes per turn. The editor automatically sets the strikes available to the force according to the appropriate historical types.

As units are created and assigned to formations, the cumulative force value, total number of units, and total number of formations are calculated and displayed in the boxes below the available units box. Formation names are automatically created, based upon the number of units assigned to the formation and the type of the first unit in the formation.

Placing Units - The Unit deployment Screen

This screen is very similar to the main game screen. The primary differences are the effects of right and left mouse clicks within the map window.

See the “Unit Deployment Screen Controls” section on page 34.

When all units of a given formation have been placed, or if the “Get/Put/Reinforce” button shows “reinforce”, any left mouse clicks in the map window set objectives for the formation. These objectives are used to create victory conditions for the scenario and to provide strategy hints to the computer player.

Up to three objectives may be placed for each formation. The highest numbered objective is the final objective for the formation and its capture rewards the controlling player with victory points in the game. The computer player uses the lower numbered objectives as way points to the final objective. Unless your map terrain is very complicated, it is not absolutely necessary to plan a careful path for the formation. But there are times, especially in larger scenarios, where it is convenient to use intermediate objectives to fine tune the path that the computer player follows to its final objective. If a formation is to enter the scenario as a reinforcement after the scenario begins, its first objective hex must be on a map edge.

Set the entry turn for any reinforcing formations by calling up the formation display with the “This Formation” button and clicking on the “+” or “-” buttons next to the entry turn shown there.

The computer player tries to seize enemy-controlled objectives, and defends objectives under friendly control. If the enemy takes a friendly-controlled objective, the computer player orders its defending units to attack and retake the objective. Lower numbered objectives are given higher priority.

For formations with support orders, objectives are treated a little differently. No victory points are awarded for control of these objectives, and the support units generally do not move toward their objectives under computer control. Instead, the objectives are used to prioritize indirect fire from the support units. Under computer control, support units choose targets near the objective hexes if possible.

If you give a formation orders to hunt, the formation ignores all objectives and attempts to locate and attack enemy forces.

Objectives and formation orders should be chosen carefully. In addition to the victory condition implications, objective placement and formation orders define the behavior of the computer player. During a game, the computer player tries to capture the objectives set for each formation. If you don't choose objectives, the computer player becomes confused.

Set the Scenario Environment

There are several environmental variables that have strong effects on game play.

Ground conditions affect movement costs for entry into most terrain types. Some units are affected by soft ground more than others. Be careful with soft ground conditions in earlier historical periods. Soft ground can slow a scenario to a crawl if units have low movement rates or are “road-bound”.

There are three levels of lighting. Daylight is the brightest condition. Units and airstrikes can see further in daylight than in other conditions. Visibility is limited in twilight, and very limited for most units at night.

Precipitation limits the distance that units can see, as well as the ability of air strikes to find their targets. Light precipitation reflects haze, light mist, smoke from large fires, etc. It has a limited effect. Heavy precipitation represents rain or snow and has a much more significant effect on game play.

Airstrikes may not be particularly useful in heavy precipitation or night conditions.

Save the Scenario

Before you save, check the following items:

- Does the map look the way you want it to?
- Are all units placed on the map or assigned as reinforcements?
- Do all formations have reasonable orders?
- Have you assigned objectives to all formations?
- Have you set up the scenario environment ?

When you are satisfied with all of the scenario settings, use Save Scenario in the File menu to save the scenario file.

The editor allows you to save the scenario in an incomplete state so you don't have to finish a scenario design in one sitting. But if you try to save such an incomplete scenario, the editor gives you a warning that one or more items are not completed. You can always return to the scenario to complete the unfinished items. If you try to use an incomplete scenario to play the game, results are unpredictable. If you don't get any warnings when you save, the scenario is ready for game play.

Victory Conditions

When you save a scenario, you are given the option of using fixed or calculated objective values. Most of the time, it is best to use calculated objective values.

Fixed Objective Values

If you choose fixed values, there is no calculation of objective values. Whatever values the objectives currently have remain set. You should not use this option unless you have carefully set objective values using the manual objective value set button in the control panel.

Calculated Objective Values

If you choose calculated values, victory conditions for your scenario are automatically set by the editor. These values are based on the total values of each force and the objectives assigned to each player.

Each final (highest numbered) objective hex assigned to any formation with attack or defend orders is assigned a victory point value equal to 10% of the total value of all equipment assigned to both sides. Note this means that equipment losses dominate victory conditions if you set a small number of objectives, while objectives dominate victory conditions if you set many objectives.

Each objective hex is only counted once for victory conditions, even if it is the final objective for more than one formation. Typically, each side should have no more than two or three final objective hexes.

APPENDICES

Appendix A - Details of Calculations

Field of View Calculation

Calculating the field radius:

MAXIMUM RADIUS OF FIELD OF VIEW

LIGHTING CONDITION	STATIONARY RADIUS	MOVING RADIUS
Daylight	16	10
Twilight	12	6
Night	4	1
Night (with night vision)	8	2
Night (with thermal vision)	12	6

PRECIPITATION EFFECTS ON FIELD OF VIEW RADIUS

PRECIPITATION	VIEW RADIUS
None	No effect
Light	-2
Heavy	-6

Example of field of view radius calculation:

Twilight lighting + Light precipitation
stationary..... 12 - 2 = 10 hex radius.
moving..... 6 - 2 = 4 hex radius

Calculating the field of view:

Every hex within the field radius is checked to see if it can be viewed by from the center of the field.

Terrain comes in several levels. Some terrain modifications can increase the level of the terrain for view blocking purposes. If the hex contains woods, village, town, or berm terrain it is increased one level for blocking purposes. Smoke blocks the field of view at all elevations, unless the viewing unit has thermal sights. Helicopter units see and are seen as though they were in terrain one level higher than that of the hex they are in.

For each hex in the field of view, a line of hexes is calculated from the center of the field (the origin) to the test hex. The slope of the line is calculated, and its elevation is checked against the blocking level of each hex along the line. If there is no blocking terrain between the origin and the test hex, the hex can be viewed.

Direct Fire Hit Probability

Each shot fired at a target has a chance of hitting. This chance is calculated as follows:

At any given range, each weapon has a basic chance to hit a target with direct fire. This chance to hit is given in the weapon description table. The number ranges from 0 (no chance to hit) to 90%.

Each shot is first checked against this basic chance to hit. A weapon with an 80% chance to hit passes this test eight times out of ten.

If the shot passes this first test, it then has to pass a series of tests to see if the hit is still allowed. Each test is performed separately.

If the target is moving, there is 20% chance that the shot misses.

If the firing equipment has moved this turn and does not have the stabilized weapon advantage, there is a 30% chance that the shot misses.

If the target hex is wooded, wadi, frozen stream, or built up (town or village), there is a 20% chance that the shot misses.

If the target hex is smoked, there is a 20% chance that the shot misses.

If the shot is fired from the area in front of the target unit and the unit is in a berm hex, it is assumed that the unit is partly hidden by the berm. There is a 20% chance that the shot misses.

If the target is static, there is a 10% chance that the shot will miss.

Only if a shot passes all of these tests is it treated as a hit.

Direct Fire Kill Probability

Direct fire hits can still fail to kill their targets. The chance of a hit being treated as a kill is determined as follows:

Armored Targets:

If the hit is from a weapon with a hard attack rating, the target is killed if the hard attack rating of the firing weapon is equal to or greater than the armor rating of the target minus a random number from one to five. The armor rating of the target is dependent upon the direction that the fire came from. Hits received through one of the three hexes in the forward facing of the unit are tested against the frontal armor rating of the target. Hits received through a side hex are tested against the side armor of the target.

If the hit is from a weapon without a hard attack capability, the target is killed if the shooting weapon's soft attack rating is greater than or equal to a random number from 1 to 8 times the target's armor rating.

As you can see, it is difficult to kill an armored target unless the firing weapon has a hard attack (armor piercing) capability.

Unarmored Targets:

The hit is treated as a kill if the soft attack rating of the firing weapon is equal or greater than a random number from 1 to 10.

Hard attack and soft attack values for weapons are given in "Appendix C" which begins on page 51.

Indirect Fire Kill Probabilities

Each shot fired into the target hex has a chance of killing any given piece of equipment in the hex. Every piece of equipment in the hex checks for damage.

Armored Targets:

The target equipment is killed if the shooting weapon's soft attack rating is greater than or equal to a random number from 1 to 32 times the target's side armor rating.

Unarmored Target:

The terrain around the target can affect the lethality of the hit.

If the target is in wadi, frozen stream, woods, or village terrain, there is a 20% chance that the hit does no damage.

If the target is in fort or town terrain, there is a 50% chance that the hit does no damage.

If the hit has passed both of these tests, it is treated as a kill if the soft attack rating of the firing weapon is equal or greater than a random number from 1 to 32.

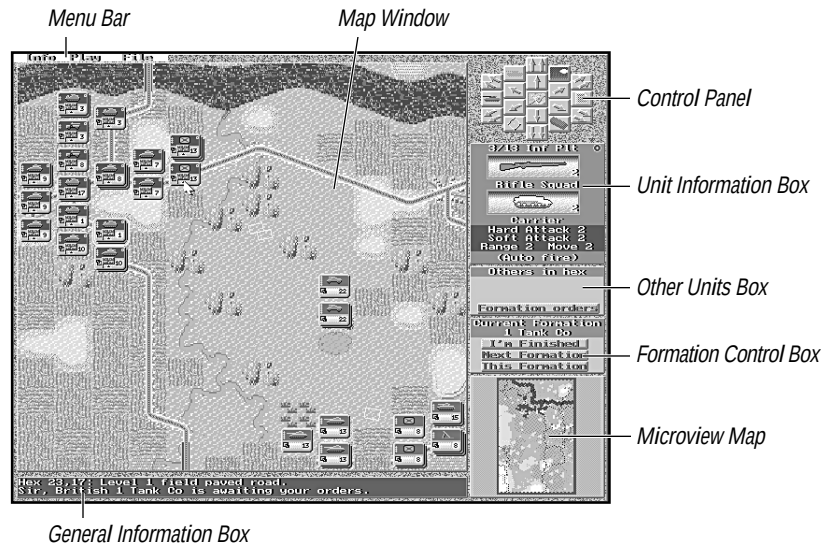
Smoke Fire Details

If the total soft attack strength shot into the target hex is greater than a random number from 1 to 25, the hex is smoked.

No ammo depletion check is made when a unit fires smoke. You can't run your unit out of ammo by firing smoke missions.

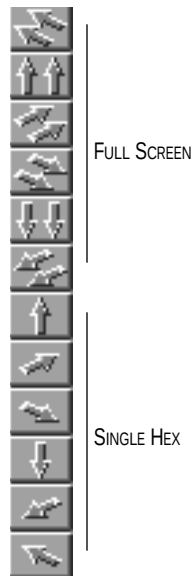
Appendix B - Examples of Graphic Displays

Game Screen



Control Panel Buttons

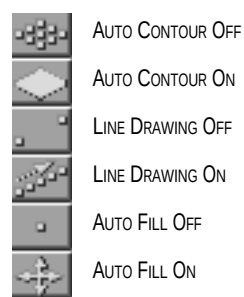
Scrolling Buttons



Information Buttons



Editor Mode Buttons



The Undo Button



Scrolling buttons are used to move the map window around to show different portions of the game map.

Full screen buttons scroll the screen by one full window width and height. Single hex buttons scroll the screen by one hex.

Information buttons bring up temporary displays.

The "Overview" button calls up an intermediate scale map of the battlefield.

The "Report" button brings up a report on the current status of the game or editor.

The "Silhouettes" button temporarily replaces unit counter icons on the map with large silhouettes.

The "Lift Units" button removes unit icons from the map.

The "Field of View" button shows the field of view of the active unit.

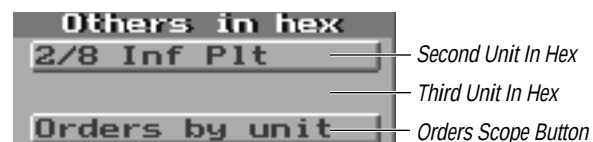
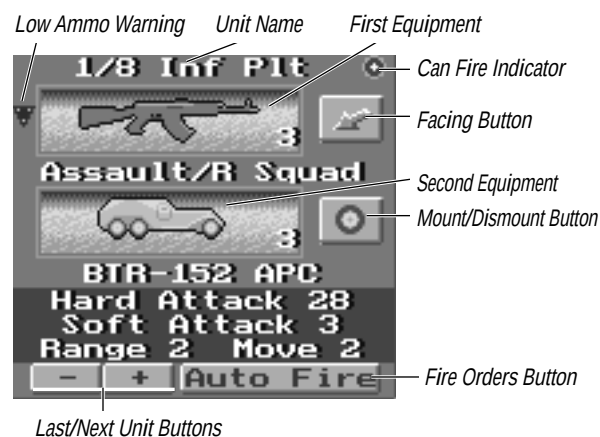
The "Environment" button brings up a display of current environmental conditions. In the editor, it is also used to make changes to the environment.

The "Undo" button restores the game or editor to the condition prior to your last action.

The "Editor Mode" buttons change map drawing modes in the scenario editor.



Unit and Formation Controls



Unit and Formation Controls allow you to view and issue some types of orders to your units.

The Unit Information Box

If the light in the “can fire” indicator is illuminated, the unit is currently capable of firing weapons. Remember that mounted equipment can’t fire, so the “can fire” indicator may blink on or off if you mount or dismount the unit.

The numbers in the corners of the equipment drawing boxes show the quantity of equipment assigned to the unit.

The facing button shows the current facing of the active unit and allows you to set the facing directly.

The mount/dismount button will only appear if the unit can be mounted or dismounted. Generally, you can only mount or dismount equipment if the unit hasn’t already performed some action in the current turn. If the unit is mounted, the word “mounted” will appear on the mounted equipment.

The “Last/Next” units buttons are used to cycle through units in the active formation.

The “Fire Orders” button can be set to “Auto-fire” or “Hold Fire”.

If a low ammo warning symbol appears next to one of the equipment drawings, that equipment is low on ammo. You may see changes in unit characteristics if you have run out of one or more ammo types. If you start running low on ammo, you might want to check the detailed unit report.

Left-click on any non-button location in the Unit Information Box to center the active unit. Right-click on any non-button location to call up a detailed report on the unit.

The Other Units Box

One or two unit names may appear in this box if other units are in the same hex as the active unit shown in the Unit Information Box. If the unit names appear in a button, you can left-click on the button to make that unit the active unit, or you can right-click on the button to call up a detailed report on the unit. If a unit name appears but isn’t in a button, you aren’t “in contact” with that unit.

Use the orders scope button to select “Orders by unit”, “Orders by stack”, or “Formation orders”. This choice determines how many units will be affected by any orders you issue.

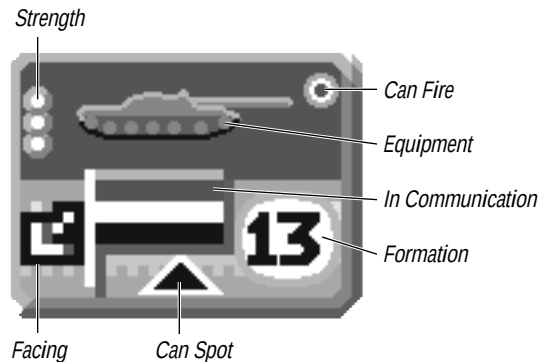
The Formation Control Box

“I’m Finished” turns game control over to the other player.

“Next Formation” makes the next formation active.

“This Formation” brings up a display of the active formation.

Unit Icon



The strength dots show the quantity of equipment assigned to the unit.

The “can fire” light shows that the unit is currently capable of firing weapons. In most cases, this implies that the unit can also move. If no light appears the unit is not currently able to fire weapons, either because the unit is mounted, it is out of ammo, or it has expended its full movement allowance for the turn.

The equipment drawing shows the equipment assigned to the unit. In the case of units with two types of equipment, the top equipment type is shown. Mounted units show the transports and dismounted units show the mountable equipment assigned to the unit.

The facing arrow shows the orientation of the unit.

If the unit is in communication, a national flag appears. If the flag is not displayed, the unit is out of communication and may not be selected as the active unit.

The formation number is shown in the lower right corner of the icon.

If the unit is capable of spotting hexes for indirect fire, a small triangle appears. If this triangular symbol is not displayed, the unit is not currently capable of spotting hexes due to the control level of its parent formation and the unit's movement status. Most units can't spot for indirect fire if they have recently moved.

Mouse Cursors



The mouse cursor can take one of seven forms during a game.

- **Direct Fire Hex:** The active unit can shoot direct fire into the hex under the mouse cursor.
- **Indirect Fire Hex:** The active unit can't shoot direct fire into the hex, but can shoot indirect fire into the hex.
- **Smoke Fire Hex:** The active unit is only capable of shooting smoke into the hex under the cursor.
- **Hex in Field of View:** The active unit can't shoot into the hex, but it can “see” the hex.
- **Other Map Hex:** The active unit can't see or fire into the hex under the mouse cursor.
- **Out of Map Window:** The mouse cursor is not in the map window.
- **Please Wait:** You may see this cursor when the program is loading data files or performing extended calculations.

Appendix C - Weapon Description Table

WEAPON INFORMATION:

WEAPON	RATE OF FIRE	SOFT ATTACK STRENGTH	INDIRECT FIRE RANGE	DIRECT FIRE CHANCE TO HIT/HARD ATTACK STRENGTH (BY RANGE)															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Heavy Rifle	2	2	0	9/2	3/0														
Light Rifle	2	1	0	9/0	1/0														
Assault Rifle	2	3	0	9/1	3/0														
Flame/Explosives	2	4	0	9/1															
SMG	2	3	0	9/1	1/0														
LMG	4	1	0	9/0	1/0														
LMG/RL	3	2	0	9/8	1/8														
LMG/HRL	3	2	0	9/16	1/16														
LMG/RPG	3	2	0	9/28	5/28														
LMG/Dragon	3	2	0	8/16	8/28	8/28	8/28												
LMG/Mortar	3	4	5	9/29	5/29														
MMG	4	2	0	9/0	5/0														
HMG	3	4	0	9/1	7/0	3/0													
MMG(dual)	4	3	0	9/0	5/0														
HMG(quad)	4	4	0	9/1	7/0	3/0													
Vulcan	4	3	0	9/1	7/0	6/0	4/0	2/0	2/0	1/0	1/0								
20mmAT	2	1	0	9/2	8/2	6/1	4/1	2/0	1/0										
20mmDP	4	3	0	9/9	8/9	7/9	6/8	4/8	3/7	1/7									
20mmAA	2	1	0	9/1	8/0	6/0	4/0	2/0	2/0	1/0	1/0								
20mmAA(quad)	3	4	0	9/1	8/0	6/0	4/0	2/0	1/0	1/0									
23mmAA(dual)	3	3	0	9/4	7/2	5/2	4/1	3/0	2/0	1/0									
23mmAA(quad)	3	5	0	9/4	7/2	5/2	4/1	3/0	2/0	1/0									
57mmAA(dual)	3	2	0	9/9	9/9	8/8	8/8	7/7	7/7	7/7	6/7	5/6	5/6	4/6					

WEAPON	RATE OF FIRE	SOFT ATTACK STRENGTH	INDIRECT FIRE RANGE	DIRECT FIRE CHANCE TO HIT/HARD ATTACK STRENGTH (BY RANGE)															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
25mmAT	2	1	0	9/1	7/1	5/1	3/0	1/0											
25mmCG	4	3	0	9/9	8/9	7/9	6/8	4/8	3/7	1/7									
30mmAT	3	3	0	8/9	7/9	7/9	6/9	5/9	2/9										
37mmAT	2	2	0	9/4	7/3	6/3	3/2	2/2	1/1										
37mmAA	2	2	0	9/0	7/0	6/0	4/0	2/0	2/0	1/0	1/0	1/0							
40mmAA	3	3	0	9/5	7/4	5/3	4/3	2/2	2/2	1/1	1/0	1/0							
2Pdr	2	0	0	9/6	7/5	6/5	4/4	2/3	2/3										
45mmAT	2	2	0	9/4	8/4	6/3	4/3	2/2											
47mmGun	2	2	0	8/1	5/1	3/1	2/1												
47mmAT	2	2	0	9/6	8/5	6/5	3/5	2/4	1/4	1/3	1/3								
50mmAT	2	2	0	9/10	8/9	6/7	4/6	2/4	2/2										
50mmAT(long)	2	2	0	9/15	8/12	7/9	4/7	3/5	2/4										
57mmAT	2	2	0	9/9	8/9	7/9	4/8	3/8	2/8	1/7	1/7								
57mmGun	2	2	0	8/1	5/1	3/1	2/1	1/1											
6Pdr	2	0	0	9/9	8/9	6/9	4/8	2/8	1/8	1/7	1/7								
73mmAT	2	3	0	9/20	7/20	5/20	3/20	1/20											
75mmAA	2	3	0	9/2	5/2	5/2	3/2	2/2	1/2	1/2									
75mmAT(short)	2	3	0	9/5	6/4	3/4	2/3	1/3	1/3										
75mmAT	2	3	0	9/12	7/10	6/9	4/8	2/7	2/7	1/6	1/5	1/4							
75mmAT(long)	2	3	0	9/16	8/14	6/13	4/12	2/11	2/10	1/9	1/9	1/8							
76mmAT(short)	2	3	0	9/6	6/5	3/5	2/5	1/4	1/2										
76mmAT	2	3	0	9/10	7/9	5/8	3/7	2/6	1/5	1/4									
76mmAT(long)	2	3	0	9/13	8/11	6/10	4/9	2/8	2/8	1/7	1/6	1/5							
76mmATe	2	3	0	9/21	8/19	6/18	4/16	2/15	2/13	1/12	1/10	1/8							
77mmAT	2	3	0	9/23	8/21	6/20	3/18	2/17	1/15	1/14	1/13								
17Pdr	2	3	0	9/25	8/24	7/23	4/22	2/21	2/20	1/19	1/18	1/17							
20Pdr	2	3	0	9/27	8/26	6/25	4/23	2/21	2/19	1/17	1/15	1/13	1/12						

WEAPON	RATE OF FIRE	SOFT ATTACK STRENGTH	INDIRECT FIRE RANGE	DIRECT FIRE CHANCE TO HIT/HARD ATTACK STRENGTH (BY RANGE)															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
122mmGun	1	5	50	9/7	7/7	6/7	4/7	2/7	1/7	1/7	1/7								
130mmGun	1	5	85	9/19	7/19	6/19	4/19	3/19	2/19	1/19									
15cmGun	1	5	84	9/7	5/7	2/7	1/7	1/7											
150mmHow	1	6	22	9/13	5/13	2/13	1/13	1/13											
150mmGun	1	6	56	9/13	6/13	4/13	2/13	1/13	1/13										
152mmHow	1	6	50	9/15	6/15	4/15	2/15	1/15	1/15										
152mmGun	1	6	72	9/15	7/15	5/15	3/15	2/15	1/15	1/15									
152mmFG	1	6	85	9/15	7/15	5/15	3/15	2/15	1/15	1/15									
155mmHow	1	6	54	9/14	6/14	4/14	2/14	1/14											
155mmGun	1	6	78	9/14	7/14	5/14	3/14	2/14	1/14	1/14									
170mmGun	1	7	85	9/19	7/19	6/19	4/19	3/19	2/19	1/19									
175mmGun	1	7	85																
180mmGun	1	8	85																
203mmGun	1	8	85																
21cmGun	1	8	50																
3inMr	3	3	11																
4.2inMr	2	4	14																
6inMr	1	6	7																
9.5inMr	1	9	8																
45mmMr	3	2	6																
50mmMr	3	2	6																
58mmMr	3	3	3																
60mmMr	3	3	6																
76mmMr	3	3	7																
81mmMr	3	3	11																
82mmMr	3	3	11																
90mmMr	3	3	5																

WEAPON	RATE OF FIRE	SOFT ATTACK STRENGTH	INDIRECT FIRE RANGE	DIRECT FIRE CHANCE TO HIT/HARD ATTACK STRENGTH (BY RANGE)															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
120mmMr	2	5	20																
Nebelwerfer	1	9	28																
Panzerwerfer	1	9	28																
132mmMRL	1	11	36																
122mmMRL	1	20	44																
240mmMRL	1	15	44																
227mmMRL	1	28	85																
T35guns	1	5	0	9/4	6/4	3/3	2/3	1/2	1/2										
Churchguns	1	3	0	9/6	4/5	2/5	1/4	1/4											
Charguns	1	5	0	9/6	8/5	6/5	3/5	2/4	1/4	1/3	1/3								
Leeguns	1	5	0	9/8	6/8	3/7	2/7	1/6	1/6										
AH1suite	4	4	0	9/9	8/9	7/9	6/8	4/8	3/7	1/7									
AH64suite	4	4	0	9/10	8/9	7/9	6/9	4/8	4/8	2/8									
152mmGun/ATGM	1	6	0	9/27	7/27	5/27	3/27	4/32	8/32	9/32	9/32	9/32	9/32	9/32	9/32	9/32	9/32	9/32	9/32

A few notes about the weapon description table:

Rate of fire is a measure of how many times a given weapon can fire per game turn. Since there is a small random factor involved, weapons sometimes fire more or fewer times on any given turn.

Soft attack is a measure of the lethality of the weapon vs. unarmored targets.

Indirect fire range is the maximum range (in hexes) that the weapon can fire an indirect fire mission. Some weapons actually have much greater ranges than given here, but with a maximum map distance of 85 hexes all ranges over 100 have been shortened to 99, for game purposes.

Direct fire chance to hit/Hard attack is a table of: chance to hit*10% and lethality vs. armored targets at any given range. Example: a table entry of "9/32" means the weapon has a 90% chance to hit a target and the ability to reliably kill a target with an armor rating of 32 or less.

Appendix D - Equipment Description Table

EQUIPMENT INFORMATION:

EQUIPMENT	PRIMARY WEAPON	SECONDARY WEAPON	FRONT ARMOR	SIDE ARMOR	SPEED	SPECIAL CHARACTERISTICS
Rifle Squad	LMG	Heavy Rifle	0	0	2	WF (can be hidden)
Assault Squad	LMG/HLR	Assault Rifle	0	0	2	AA WF (can be hidden)
Assault/R Squad	LMG/RPG	Assault Rifle	0	0	2	AA WF SS (can be hidden)
Assault/A Squad	LMG/Dragon	Assault Rifle	0	0	2	NV AA WF SS (can be hidden)
Assault/B Squad	LMG/Mortar	Assault Rifle	0	0	2	NV AA IF WF SS (can be hidden)
Lt. Rifle Squad	Light Rifle		0	0	2	WF (can be hidden)
Engineer Squad	Heavy Rifle	Flame/Explosives	0	0	2	WF (can be hidden)
HMG	HMG		0	0	1	AA (can be hidden)
SMG Squad	LMG	SMG	0	0	2	WF (can be hidden)
Rifle/RL Squad	LMG/RL	Heavy Rifle	0	0	2	WF (can be hidden)
Rifle/HLR Squad	LMG/HLR	Heavy Rifle	0	0	2	WF (can be hidden)
SMG/RL Squad	LMG/RL	SMG	0	0	2	WF (can be hidden)
SMG/HLR Squad	LMG/HLR	SMG	0	0	2	WF (can be hidden)
Bicycles			0	0	4	rb
Motorcycles			0	0	24	
Jeep	MMG		0	0	24	AA fe
Truck			0	0	22	rb fe
Halftrack	MMG		1	1	20	AA
Horses			0	0	4	WF fe
20mm DP Gun	20mmDP		0	0	0	AA
20mm AA Gun	20mmAA		0	0	0	AA
37mm AA Gun	37mmAA		0	0	0	AA
40mm AA Gun	40mmAA		0	0	0	AA
75mm AA Gun	75mmAA		0	0	0	AA

EQUIPMENT	PRIMARY WEAPON	SECONDARY WEAPON	FRONT ARMOR	SIDE ARMOR	SPEED	SPECIAL CHARACTERISTICS
88mm AA Gun	88mmAT		0	0	0	AA
25mm AT Gun	25mmAT		0	0	1	
37mm AT Gun	37mmAT		0	0	1	
47mm AT Gun	47mmAT		0	0	0	
45mm AT Gun	45mmAT		0	0	1	
50mm AT Gun	50mmAT(long)		0	0	0	
57mm AT Gun	57mmAT		0	0	0	
75mm AT Gun	75mmAT		0	0	0	
76mm AT Gun	76mmAT		0	0	0	
85mm AT Gun	85mmAT		0	0	0	fc
88mm DP Gun	88mmAT		0	0	0	
100mm AT Gun	100mmAT		0	0	0	fc
107mm Recoilless	107mmRR		0	0	1	
2 Pdr AT Gun	2Pdr		0	0	0	
17 Pdr AT Gun	17Pdr		0	0	0	fc
37mm Inf Gun	37mmGun		0	0	2	(can be hidden)
65mm Inf Gun	65mmHow		0	0	1	(direct fire only)
105mm Inf Gun	105mmHow		0	0	1	(direct fire only)
150mm Inf Gun	150mmHow		0	0	1	(direct fire only)
75mm Gun	75mmGun		0	0	0	IF SF
76mm Gun	76mmGun		0	0	0	IF SF
77mm Gun	77mmGun		0	0	0	IF SF
95mm Gun	95mmGun		0	0	0	IF SF
105mm Gun	105mmGun		0	0	0	IF SF
4.7" Gun	4.7inGun		0	0	0	IF SF
120mm Gun	120mmGun		0	0	0	IF fc SF
122mm Gun	122mmGun		0	0	0	IF fc SF CB
130mm Gun	130mmGun		0	0	0	IF fc SF CB

EQUIPMENT	PRIMARY WEAPON	SECONDARY WEAPON	FRONT ARMOR	SIDE ARMOR	SPEED	SPECIAL CHARACTERISTICS
150mm Gun	150mmGun		0	0	0	IF fc SF
15cm Gun	15cmGun		0	0	0	IF fc SF
152mm Gun	152mmGun		0	0	0	IF fc SF CB
152mm Field Gun	152mmFG		0	0	0	IF fc SF CB
6" Gun	6inGun		0	0	0	IF fc SF
155mm Gun	155mmGun		0	0	0	IF fc SF CB
170mm Gun	170mmGun		0	0	0	IF fc SF
180mm Gun	180mmGun		0	0	0	IF fc SF CB
8" Gun	8inGun		0	0	0	IF fc SF
21cm Gun	21cmGun		0	0	0	IF fc SF
18 Pdr Gun	18Pdr		0	0	0	IF fc SF
25 Pdr Gun	25Pdr		0	0	0	IF fc SF
15 Pdr Gun	15Pdr		0	0	0	IF fc SF
60 Pdr Gun	60Pdr		0	0	0	IF fc SF
75mm Howitzer	75mmHow		0	0	0	IF SF
76mm Howitzer	76mmHow		0	0	0	IF SF
3" Howitzer	3inHow		0	0	0	SF
100mm Howitzer	100mmHow		0	0	0	IF fc SF
105mm Howitzer	105mmHow		0	0	0	IF SF
4.5" Howitzer	4.5inHow		0	0	0	IF fc SF
122mm Howitzer	122mmHow		0	0	0	IF fc SF
152mm Howitzer	152mmHow		0	0	0	IF fc SF
6" Howitzer	6inHow		0	0	0	IF fc SF
155mm Howitzer	155mmHow		0	0	0	IF fc SF
45mm Mortar	45mmMr		0	0	2	IF SF (can be hidden)
50mm Mortar	50mmMr		0	0	2	IF SF (can be hidden)
58mm Mortar	58mmMr		0	0	2	IF SF (can be hidden)
60mm Mortar	60mmMr		0	0	2	IF SF (can be hidden)

EQUIPMENT	PRIMARY WEAPON	SECONDARY WEAPON	FRONT ARMOR	SIDE ARMOR	SPEED	SPECIAL CHARACTERISTICS
76mm Mortar	76mmMr		0	0	1	IF SF
3" Mortar	3inMr		0	0	1	IF SF
81mm Mortar	81mmMr		0	0	1	IF SF
82mm Mortar	82mmMr		0	0	1	IF SF
90mm Mortar	90mmMr		0	0	1	IF SF (can be hidden)
4.2" Mortar	4.2inMr		0	0	0	IF SF
120mm Mortar	120mmMr		0	0	0	IF SF
6" Mortar	6inMr		0	0	0	IF SF
9.5" Mortar	9.5inMr		0	0	0	IF SF
PzKw I	MMG(dual)		2	1	12	WF
PzKw IIB	20mmAT	MMG	2	1	17	WF
PzKw IIF	20mmAT	MMG	3	2	16	WF
PzKw IIL	20mmAT	MMG	3	2	22	WF
PzKw 35t	37mmAT	MMG	3	2	12	
PzKw 38t	37mmAT	MMG	3	2	13	WF
PzKw IIIE	37mmAT	MMG	3	3	11	
PzKw IIIF	50mmAT	MMG	3	3	11	
PzKw IIH	50mmAT	MMG	4	3	11	
PzKw IIJ	50mmAT(long)	MMG	5	3	11	
PzKw IIIL	50mmAT(long)	MMG	7	3	11	
PzKw IIIN	75mmAT(short)	MMG	7	3	11	
PzKw IV (early)	75mmAT(short)	MMG	3	2	13	
PzKw IVE	75mmAT(short)	MMG	5	3	13	
PzKw IVF1	75mmAT(short)	MMG	5	3	13	
PzKw IVF2	75mmAT(short)	MMG	5	3	13	
PzKw IVH	75mmAT	MMG	7	4	13	
PzKw V Panther	75mmAT(long)	MMG	15	4	14	
PzKw VI Tiger I	88mmAT	MMG	12	7	12	WF

EQUIPMENT	PRIMARY WEAPON	SECONDARY WEAPON	FRONT ARMOR	SIDE ARMOR	SPEED	SPECIAL CHARACTERISTICS
PzKw VI Tiger II	88mmAT(long)	MMG	17	8	12	
PzJg I	47mmAT		2	1	11	fc
JPz 38 Hetzer	75mmAT	MMG	11	2	11	fc
Marder	75mmAT	MMG	2	1	11	fc
JPz IV	75mmAT(long)	MMG	11	3	9	fc
Nashorn	88mmAT(long)	MMG	2	1	11	fc
JPz V JagdPanthr	88mmAT(long)	MMG	16	4	14	fc
JPz VI JagdTiger	128mmAT	MMG	25	7	11	fc
Elefant	88mmAT(long)		21	7	11	fc
StuG III (early)	75mmAT(short)		5	3	11	fc
StuG III (late)	75mmAT	MMG	8	3	11	fc
StuH 42 SP Gun	105mmGun		8	3	11	fc (direct fire only)
StuG IV	75mmAT	MMG	8	3	11	fc
Wirbelwind	20mmAA(quad)		3	2	13	AA
sIG 33 SP Gun	150mmHow		1	1	9	fc (direct fire only)
Gw II SP Gun	150mmHow		2	1	11	fc SF (direct fire only)
Gw 38 SP Gun	150mmHow		1	1	11	fc SF (direct fire only)
Wespe SP Gun	105mmGun	MMG	2	1	8	IF fc SF
Hummel SP Gun	150mmGun	MMG	2	1	9	IF fc SF
StuPz IV Brumbar	150mmHow	MMG	12	4	8	fc (direct fire only)
SdKfz 10/4	20mmAA		2	1	12	AA
SdKfz 251/1	MMG		2	1	12	AA
SdKfz 251/9	75mmAT(short)	MMG	2	1	12	
SdKfz 251/10	37mmAT		2	1	12	
SdKfz 6/2	37mmAA		0	0	12	AA
SdKfz 7/1	20mmAA(quad)		0	0	12	AA
SP 20mm AA	20mmAA		0	0	17	AA rb fe
SdKfz 234/1	20mmAT	MMG	4	1	22	

EQUIPMENT	PRIMARY WEAPON	SECONDARY WEAPON	FRONT ARMOR	SIDE ARMOR	SPEED	SPECIAL CHARACTERISTICS
SdKfz 234/2	50mmAT(long)	MMG	4	1	22	
SdKfz 234/4	75mmAT	MMG	4	1	22	
SdKfz 221	MMG		1	1	23	
SdKfz 222	20mmAT	MMG	1	1	22	
SdKfz 231-6	20mmAT	MMG	2	1	18	
SdKfz 231-8	20mmAT	MMG	2	1	22	
Nebelwerfer	Nebelwerfer		0	0	0	IF
Panzerwerfer 42	Panzerwerfer		2	1	12	IF fc
BT-5	45mmAT	MMG	2	1	19	WF
BT-7	45mmAT	MMG	3	2	20	WF
T-26S	45mmAT	MMG	3	2	10	
T-28 (early)	76mmAT(short)	MMG	4	2	9	
T-28 (late)	76mmAT(short)	MMG	6	2	9	
T-34/76 (early)	76mmAT	MMG	6	4	18	WF
T-34/76 (late)	76mmAT	MMG	8	5	18	WF
T-34/85	85mmAT	MMG	10	5	17	WF
T-35	T35guns	MMG	4	3	10	
T-40	20mmAT	MMG	2	1	12	
T-60	20mmAT	MMG	4	2	12	
T-70	45mmAT	MMG	5	2	14	
KV-1 (early)	76mmAT(short)	MMG	11	6	12	
KV-1 (late)	76mmAT	MMG	12	7	12	
KV-II	152mmHow	MMG	9	6	7	fc (direct fire only)
KV-85	85mmAT	MMG	13	6	12	
JS-II	122mmAT	MMG	15	9	11	
JS-III	122mmAT	HMG	22	9	12	
SU-57	57mmAT	MMG	2	1	19	fc
SU-76	76mmAT	MMG	3	2	18	fc

EQUIPMENT	PRIMARY WEAPON	SECONDARY WEAPON	FRONT ARMOR	SIDE ARMOR	SPEED	SPECIAL CHARACTERISTICS
SU-85	85mmATe	MMG	9	5	17	fc
SU-100	100mmAT	MMG	12	5	17	fc
SU-122	122mmGun	MMG	9	5	11	fc (direct fire only)
SU-152	152mmGun	MMG	12	6	11	fc (direct fire only)
JSU-122	122mmAT	MMG	13	7	11	fc
JSU-152	152mmGun	MMG	13	7	11	fc (direct fire only)
BA-6 Armd Car	45mmAT	MMG	2	1	16	
BA-20 Armd Car	MMG		2	1	16	
BA-32 Armd Car	45mmAT	MMG	2	2	16	
BA-64 Armd Car	MMG		2	1	16	
Truck/Quad HMG	HMG(quad)		0	0	22	AA rb
BM-13 Katyusha	132mmMRL		0	0	22	rb IF SF fe
A-9 Cruiser	2Pdr	MMG	2	1	13	
A-10 Cruiser	2Pdr	MMG	4	2	8	
Mathilda I	MMG		7	4	4	
Mathilda II	2Pdr	MMG	11	5	8	
A-13 Cruiser	2Pdr	MMG	4	2	14	
A-15 CS	3inHow	MMG	4	2	14	
Crusader II	2Pdr	MMG	5	3	14	
Crusader III	6Pdr	MMG	5	3	14	
Crusader AA	40mmAA	MMG	5	3	14	AA
Valentine(early)	2Pdr	MMG	8	4	8	
Valentine (late)	6Pdr	MMG	9	4	8	
Churchill(early)	Churchguns	MMG	10	6	8	fc
Churchill (late)	6Pdr	MMG	14	6	8	fc
Firefly	17Pdr	HMG	7	3	13	WF
Achilles	17Pdr	HMG	7	2	13	
Cromwell	75mmAT	MMG	6	3	19	

EQUIPMENT	PRIMARY WEAPON	SECONDARY WEAPON	FRONT ARMOR	SIDE ARMOR	SPEED	SPECIAL CHARACTERISTICS
Comet	77mmAT	MMG	9	4	15	
Sexton SP Gun	25Pdr	MMG	4	1	13	IF SF
Archer	17Pdr	HMG	4	2	8	fc
Bishop SP Gun	25Pdr	MMG	4	2	8	IF fc SF
Mk-VI Lt Tank	MMG		2	1	15	
Morris Armd Car	MMG		2	1	22	
Daimler Scout	MMG		3	2	24	
Scout Carrier	MMG		1	1	12	
Carrier	MMG		1	1	12	
Staghound	37mmAT	MMG	3	2	22	
AEC Armd Car	75mmAT	MMG	4	2	18	
Humber Scout	MMG		2	1	24	
Humber III	MMG		2	1	19	
Marmon-Herrington	2Pdr	MMG	2	1	19	WF
Daimler II	2Pdr	MMG	2	2	18	WF
SP 40mm AA	40mmAA		0	0	17	AA rb fe
Char B1	Charguns	MMG	5	4	9	
Char Léger S-35	47mmAT	MMG	5	4	13	
Char Léger R-35	37mmAT	MMG	4	4	6	
Char Léger H-39	37mmAT	MMG	4	4	11	
Char DC H-35	37mmAT	MMG	4	3	9	
Renault AMR-35	47mmAT	MMG	2	1	13	
FCM-36	37mmAT	MMG	4	3	9	
FT-17	37mmAT		2	1	4	
Tracteur UE	MMG		1	1	9	
Panhard-178	25mmAT	MMG	2	1	14	
Autoblinda-41	20mmAT	MMG	1	1	19	
L3/33	MMG		2	1	7	

EQUIPMENT	PRIMARY WEAPON	SECONDARY WEAPON	FRONT ARMOR	SIDE ARMOR	SPEED	SPECIAL CHARACTERISTICS
L6/40	20mmAT	MMG	3	2	11	
M13/40	47mmAT	MMG	4	3	9	
M14/41	47mmAT	MMG	4	3	11	
M-40/75	75mmGun		4	3	9	fc (direct fire only)
SP 90mm AA Gun	90mmAA		0	0	17	fe
WZ.29 Armd Car	MMG		2	1	14	
TK	MMG		2	1	9	
TKS	MMG		2	1	11	
Vickers 6 Ton	MMG		2	1	8	
7TPdw	MMG		4	2	9	
7TPlw	37mmAT	MMG	4	2	9	
M3 Stuart	37mmAT	MMG	4	2	18	WF
M5 Stuart	37mmAT	MMG	6	2	18	WF
M3 Lee	Leeguns	MMG	7	3	13	
M4/75 Sherman	75mmAT	HMG	7	3	13	WF
M4/76 Sherman	76mmAT(long)	HMG	7	3	13	WF
M4/105 Sherman	105mmGun	HMG	7	3	13	WF (direct fire only)
M4 Sherman Jumbo	76mmAT(long)	HMG	12	4	12	WF
M24 Chaffee	75mmAT	MMG	5	2	16	
M26 Pershing	90mmAT	HMG	13	6	15	
M8 HMC	75mmHow	HMG	6	2	18	WF SF (direct fire only)
M12 HMC	155mmGun	MMG	2	1	9	IF fc SF
M2 GMC	37mmAT		2	1	20	
M3 GMC	75mmAT		2	1	20	
M4 SP Mortar	81mmMr		1	1	20	IF
M7 HMC Priest	105mmGun		2	1	13	IF fc SF
M10 GMC Wolvrine	76mmAT(long)	HMG	7	2	12	
M16 MGMC	HMG(quad)		2	1	20	AA

EQUIPMENT	PRIMARY WEAPON	SECONDARY WEAPON	FRONT ARMOR	SIDE ARMOR	SPEED	SPECIAL CHARACTERISTICS
M18 GMC Hellcat	76mmAT(long)	HMG	3	2	16	
M36 GMC Jackson	90mmAT	HMG	7	2	11	
T28 MGMC	37mmAA	MMG	2	1	20	AA
T30 HMC	75mmHow	MMG	2	1	20	(direct fire only)
M-52 SP Gun	105mmHow		2	1	18	IF SF
M8 Greyhound	37mmAT	HMG	2	2	22	
M20 Armd Car	HMG		2	2	22	
M50 Sherman	75mmAT(long)	HMG	12	4	13	WF
M51 Sherman	105mmAT	HMG	12	4	13	WF SM
T-1967	105mmATr	HMG	22	5	15	WF
M47 Patton II	90mmATe	HMG	22	8	15	WF
M48 (early)	90mmATe	HMG	22	8	15	NV WF
M48 (late)	105mmATr	HMG	22	8	15	NV WF
M60A1	105mmATr	HMG	23	8	15	NV WF SM
M60A3	105mmATl	HMG	23	8	15	TV SP WF SM
M1A1 Abrams	120mmATl	HMG	50	14	23	TV SP WF SM
M113 APC	HMG		2	2	22	AA WS
M2 Bradley IFV	TOW	25mmCG	5	3	21	TV WS SM
M3 Bradley IFV	TOW	25mmCG	5	3	21	TV WS SM
M3/20mm AA	20mmAA	MMG	2	1	20	AA
M3/90	90mmATe		1	1	20	NV
M3/120mm Mortar	120mmMr		1	1	20	NV IF
Jeep 106mmRR	106mmRR		0	0	24	fe
M113/TOW	TOW	HMG	2	2	22	WS
M113/120mmMr	120mmMr		2	2	22	IF WS
M163 SP AA	Vulcan		2	2	22	AA WS
M106 SP Mortar	4.2mMr		2	2	22	IF WS
M901-ITV	TOW		2	2	22	WS

EQUIPMENT	PRIMARY WEAPON	SECONDARY WEAPON	FRONT ARMOR	SIDE ARMOR	SPEED	SPECIAL CHARACTERISTICS
M107 SP Gun	175mmGun		1	1	17	IF WF fc SF CB
M109 SP Gun	155mmGun		3	1	17	IF WF fc SF CB
M110 SP Gun	203mmGun		1	1	18	IF WF fc SF CB
MLRS	227mmMRL		2	2	20	IF WF fc SF CB
OH-58 Kiowa	HMG		0	0	31	NV HH
UH-1 Huey	MMG		0	0	31	NV HH
UH-60 Blackhawk	MMG		1	1	31	NV HH
AH-1 Cobra	TOW	AH1suite	1	1	31	TV HH SP
AH-64 Apache	Hellfire	AH64suite	2	2	31	TV HH SP
Lynx AH1	TOW		1	1	31	TV HH SP
T-10	122mmAT	HMG	26	6	11	WF
T-54	100mmAT	HMG	22	5	15	WF
T-55	100mmATe	HMG	22	5	15	NV WF
T-62	115mmATe	HMG	22	5	16	NV SP WF
T-72 (early)	125mmATe	HMG	25	8	17	NV SP WF
T-72 (late)	125mmATI	HMG	30	9	17	NV SP WF
PT-76	76mmATe	MMG	2	2	14	WS
BRDM/SA-9	SA9		1	1	25	NV AA ao WS
SA-13 Gopher	SA13		1	1	19	NV AA ao WS
ZPU-4 AA Gun	HMG(quad)		0	0	0	AA (can be hidden)
ZU-23 AA Gun	23mmAA(dual)		0	0	0	AA
ZSU-23/4	23mmAA(quad)		2	2	14	NV AA WF
BRDM Armrd Car	HMG		2	1	25	NV WS
BRDM/Sagger	Sagger	MMG	2	1	25	NV WS
BTR-40 Armrd Car	MMG		1	1	25	AA
BTR-50 APC	MMG		2	1	14	WS
BTR-60 APC	HMG		2	2	25	NV WS
Type 63 APC	MMG		2	2	20	WF

EQUIPMENT	PRIMARY WEAPON	SECONDARY WEAPON	FRONT ARMOR	SIDE ARMOR	SPEED	SPECIAL CHARACTERISTICS
BMP-1 IFV	Sagger	73mmAT	3	2	22	NV WS
BM-21 MRL	122mmMRL		0	0	23	NV rb IF SF CB
BM-24 MRL	240mmMRL		0	0	19	NV rb IF SF CB
AT-3 Sagger	Sagger		0	0	2	
AT-4 Spigot	Spigot		0	0	2	
2S1 SP Gun	122mmGun		3	2	19	IF WS fc SF CB
2S3 SP Gun	152mmGun		3	2	16	IF WF fc SF CB
Mi-8 Hip			0	0	31	HH
Centurion(early)	20Pdr	MMG	32	10	11	WF
Centurion (late)	105mmATr	MMG	32	10	11	SP WF
Challenger	120mmATI	MMG	42	12	19	TV SP WF SM
Scorpion	76mmATe	MMG	6	5	25	NV WF SM
Scimitar	30mmAT	MMG	6	5	25	NV WF SM
Striker	Swingfire		2	2	25	NV WF SM
Warrior IFV	30mmAT	MMG	4	2	23	NV WF SM
FV432/81Mr	81mmMr		2	2	16	NV IF WF SM
AMX-13	75mmAT(long)	MMG	8	4	20	WF SM
ERC-90	90mmATe	MMG	3	2	25	WF
AMX-30	105mmATr	MMG	20	7	20	NV WF
AMX-30B2	105mmATI	MMG	21	7	20	NV WF
AMX-10RC	105mmAT	MMG	5	2	25	WS
AMX-10 APC	Milan	20mmDP	3	3	20	WS SM
VAB APC	MMG		2	2	25	NV AA WS
A7V	57mmGun	MMG(dual)	2	1	3	
Schneider	75mmGun	MMG	2	2	3	fc (direct fire only)
St. Chamond	75mmGun	MMG	2	2	3	fc (direct fire only)
FT-17(MG)	MMG		2	1	4	
Mark IV (male)	47mmGun	MMG	1	1	3	

EQUIPMENT	PRIMARY WEAPON	SECONDARY WEAPON	FRONT ARMOR	SIDE ARMOR	SPEED	SPECIAL CHARACTERISTICS
Mark IV (female)	MMG(dual)		1	1	3	
Whippet	MMG		1	1	5	
Mark V	57mmGun	MMG	1	1	3	
Austin Armd Car	MMG		1	1	18	rb
Milan ATGM	Milan		0	0	2	TV
FV432 APC	MMG		2	2	16	AA WF
Ferret Armd Car	MMG		2	1	25	WF SM
AML-90	90mmATe	MMG	2	1	25	WS
M114	HMG		1	1	22	WF
M125 SP Mortar	81mmMr		2	1	22	IF WS SF
Jeep/TOW	TOW		0	0	24	NV fe
AH-1 (early)	AH1suite		1	1	31	NV HH SP
M60A2	152mmGun/ATGM	HMG	23	8	15	NV WF SM
M551 Sheridan	152mmGun/ATGM	HMG	4	2	20	NV WF SM
T-64	125mmATe	HMG	25	8	22	NV SP WF SM
ASU-57	57mmAT	MMG	1	1	14	WF fc
ASU-85	85mmATe	MMG	4	2	14	NV WF fc
ZSU-57/2	57mmAA(dual)		2	2	15	AA WF
73mm Recoiless	73mmAT		0	0	1	
75mm Recoiless	75mmRR		0	0	1	(can be hidden)
82mm Recoiless	82mmRR		0	0	1	
M998 Humvee	HMG		0	0	24	NV AA WF SS
M46 Patton	90mmATe	MMG	14	7	15	WF
BTR-152 APC	MMG		1	1	20	AA rb WF
M3A1 Scout Car	HMG		0	0	22	AA

Lower case notations indicate disadvantages and upper case notations indicate advantages. Special characteristics notations mean the following:

- NV Night Vision: The equipment has night vision gear. This capability allows the equipment to "see" further at night, a significant advantage in night scenarios. This capability begins to show up in 1967.
 - TV Thermal Vision: An improved version of night vision, thermal sights also allow the equipment to see through smoke. This capability is only available in 1991 scenarios.
 - HH Helicopter: Helicopter-equipped units are treated slightly differently from most units for movement, targeting, and field of view purposes. This is usually an advantage.
 - AA Anti-Aircraft: The equipment is capable of firing on helicopter units and air strikes.
 - rb Roadbound: The equipment pays higher movement costs for off-road travel than other equipment. This is a problem for trucks and some armored cars.
 - IF Indirect Fire: The equipment is capable of indirect fire against spotted hexes.
 - SP Stabilized Weapons Platform: The equipment is not subject to accuracy penalties if firing after moving in the same turn. This capability begins to appear in 1967 scenarios.
 - WF Fording Capability: The equipment is capable of crossing streams (not rivers) without benefit of bridges.
 - WS Amphibious Capability: The equipment is capable of moving across bodies of water (swimming).
 - fc Facing Critical: The equipment is limited in its ability to respond to enemy action that occurs "behind" it. This has a strong effect on performance in close assaults.
 - SF Smoke Mission Capability: Weapons arming the equipment are capable of firing smoke missions. Smoke has the ability to limit fields of view on the battlefield.
 - SM Smoke Mortars: Equipment types equipped with smoke mortars have the capability of immediate and automatic creation of smoke in their hex when fired upon. This is a modern capability.
 - SS Shoulder fired SAMs: The equipment has a special capability to fire short range anti-aircraft fire in addition to the capabilities of other weapons assigned to the equipment. This capability begins to appear in 1967 scenarios.
 - fe Fragile Equipment: A special category of equipment that is treated as armored, with an armor value of 0. This equipment is extremely easy to destroy if fired upon. Trucks and other light vehicles are affected by this disadvantage.
 - CB Counter Battery Radar: Some modern artillery units have this capability to spot enemy units performing indirect fire missions anywhere on the map. This feature is only in effect if you are playing with advanced command rules.
 - ao Anti-Aircraft Fire only: The system is only capable of firing on airstrikes and helicopters.
- If a system "can be hidden", units equipped with it generally begin scenarios hidden from enemy view if placed in woods or towns.

Appendix E - Full Unit Report

Right-clicking on a unit information box calls up a full unit report. This is an extremely detailed description of the unit and its associated equipment. In addition to the information shown in the unit information box, the following are displayed:

- Ammo levels for each weapon assigned to the unit.
- Indirect fire characteristics for each weapon assigned to the unit.
- Direct fire characteristics for each weapon assigned to the unit.
- Any special characteristics of any equipment types assigned to the unit.

Appendix F - Formation Status Display

Called by the Formation Status item of the Info menu, this shows a list of all formations currently available to the player. In the game, it shows the orders status of the formation. In the editor, it indicates whether units are placed and objectives have been set.

Clicking on a formation name button calls up specific information on the particular formation. Fire discipline orders may be issued to all units assigned to the active formation by clicking on the auto or hold buttons. Each unit is also described with a list of equipment, current available movement allowance, and fire capability. (An “F” indicates that the unit can still fire in the current turn. This may change with the mount status of the unit.)

If the formation is off map, its scheduled turn of entry appears.



Appendix G - Scenarios

A number of standard scenarios have been included in this package. Some scenarios are based on historical situations, although the situations have been modified to make the scenarios more interesting.

All of the standard scenarios are described in the game and in the README file, but the following special scenarios deserve special mention.

AFRICA42

An excellent beginner scenario for your first try at TANKS!

A small British tank force attempts to delay a German attack until the rest of its units can join in. The Germans are attempting to move through the area and destroy the British force if possible. The scenario takes place during a dust storm which is simulated by making the scenario occur at night.

The Germans get points for exiting; the British get points for holding the hill.

88ONHILL

A test for new-comers.

Several dreaded German 88's are placed atop a hill and surrounded by infantry companies equipped for confrontation with armored units.

Use your speedy, yet lightly-armored American vehicles to knock out the German threat. Of course, the Germans attempt to thwart the American advance.

SOVIET73

This makes a good training situation.

In 1973, US and Soviet forces were placed on alert. There was a very real chance that the Arab-Israeli conflict could spark a European war.

In this scenario, a company of American light infantry is hidden in the woods overlooking a road running from east to west across the map. A Soviet mechanized infantry company begins the game at the east map edge. The Soviet player must force passage across the map to take American controlled objectives. Victory points are awarded for taking objectives and for advancing units off the map edge. The American player must stop the Soviet from accomplishing his mission.

The Soviets have moderate close air support, and a tank company enters the map on turn 2. An American recon company enters the map on turn 7.

AMPHIB1

Renegade Middle-Eastern troops hide within the confines of an island fortress. As the leader of a covert, undercover operation, you need to gain control of the island. Not only is the island *almost* unassailable with its high cliff walls and well-guarded roads, it is armed to the teeth to resist attack from almost any source. A frontal assault would prove fatal.

The Americans should attempt an end-around type maneuver to win the objective. The renegades should prevent this from happening.

The American player should take full advantage of his night-sight capabilities, as this battle takes place after sunset.

RUSSIA44

Definitely an intermediate level scenario.

In this scenario a Russian armored force, attempting to break through and capture a bridge, is attacking a scratch German force. The Germans send a counter-attack force to attempt to stop the breakthrough.

The Russians should attempt to take control of the town in the German rear and the bridge. The Germans must prevent this from happening.

IRAQ91

An American cavalry troop is tasked with the mission of brushing aside any Iraqi resistance on the road north into Iraq. An Iraqi force consisting of a two battalions with artillery support must attempt to resist the American advance.

The Americans have moderate air support. On turn two, an American gunship company enters the map.

BULGE44

Another intermediate level scenario.

This scenario portrays the final German push to the Meuse River and the American armored counter-attack that stopped it.

FRANCE40

This is a medium to large-size scenario.

During the chaotic period of the rapid German advance across northern France in May of 1940 there were several battles that resulted from unplanned collisions of enemy forces heading in different directions. This kind of battle is called a “meeting engagement”. In the actual event, one side or the other usually wasn’t ready for combat and a lopsided route occurred. This didn’t have to be the case.

In this scenario, a French DCR (roughly equivalent to an armored brigade) traveling from west to east encounters elements of a German Panzer division headed in the other direction. Two companies of French second line light infantry are deployed around a town in the center of the map. Each side has the same goal: try to cross the map while preventing the other force from doing the same. If possible, advance units off the map for additional victory points.

MKTGD44

A good intermediate level scenario for those who have mastered the introductory scenarios.

This scenario takes place near the end of the war with British forces attempting to race north along the highway to Arnhem while paratroopers are dropped to secure a bridge over a major river. The Germans must attempt to hold on until reinforcements can attack and cut the main highway.

The British should exit off the north edge while controlling both road junctions, the bridge, and the city hexes north and south of the bridge. The German player should try to prevent the British from exiting and/or controlling either of the above mentioned hexes.

GER1945

World War II ended with Americans and Soviets facing each other along the internal border of a divided Germany. There was a small but real chance that the situation could have resulted in hostilities.

This scenario depicts a Soviet night assault on an American position in the winter of 1945-46. Visibility and mobility are further restricted by heavy snow. The Soviet goal is to break through the American defenses to objectives behind a river and ridge line. The American goal is to prevent this.

There is no air support. No reinforcements are available.

KOREA50

In July of 1950, battered remnants of the U.S. 24th Infantry division were tasked with delaying the North Korean advance while American reinforcements landed near the port of Pusan. The 24th made its stand at Taejon, blocking the main highway from Seoul to Pusan. The North Korean 3rd and 4th Divisions attacked with considerable armored support.

Those not familiar with the history of the Korean war will probably be surprised at the difficulty of the American position. The North Korean has to take Taejon and the roads leading south and east from the city. The Americans must prevent this while inflicting maximum losses on the irreplaceable North Korean motorized and armor formations.

The Americans have moderate air support. No reinforcements are available.

MDEAST67

In the early hours of the 1967 Arab-Israeli War an Israeli tank company rolled past astonished Egyptian defenses at Jiradi Pass in the Gaza strip. After gathering their wits, the Egyptians manned their defenses in the pass. This effectively isolated the small Israeli armored force. Much of the action on that day revolved around the Israeli attempts to open the pass and rescue their advance force.

In this scenario, the Israelis have to take the towns along the Mediterranean coast road. The Egyptian player must prevent this while trying to eliminate the isolated Israeli tank company.

There is no air support. No reinforcements are available.

MDEAST73

After the Egyptians crossed the Suez canal on October 6th, 1973, they spent a few days consolidating their positions and fending off minor Israeli counter attacks. On October 14th, they tried to break out of their beach-heads in the Sinai. Six separate brigade-strength attacks were launched against Israeli positions.

In this scenario, an understrength Israeli armored brigade attempts to resist an attack by a heavily supported Egyptian tank brigade. The Egyptians must seize the road hex leading off the northeast corner of the map. The Israelis must prevent this.

There is no air support. No reinforcements are available.

TRENCH18

A tedious look at fighting near the end of the Great War.

German and British troops find themselves battling between trenches. In this scenario an overpowering German force charges an English trench with hopes to gain ground at the front. What the Germans don't realize is that British tanks are being held in reserve to help stave off just such an attack.

FRANCE44

This is a very large, complicated scenario.

A rough balance of forces existed along the western front in 1944. While the allies usually had the edge, there were times when the balance was so close that both sides planned limited offensives in the same general area.

This is an interesting situation drawn from western Europe in late autumn of 1944. It is a twilight scenario, with light precipitation (haze, mist) and soft ground conditions. In the south, a two battalion US taskforce is defending a town, while ten kilometers to the north a reinforced US armored regiment is preparing to assault a German position. The Germans are preparing an assault in the south with a heavily-armored force, while preparing to defend in the north. Both sides have mounted infantry forces in reserve. The German force is slightly stronger than the US force.

The American force has moderate air support. On turn three, a Tiger company enters the map.

Appendix H - Historical Forces

1. No Man's Land 1917/18 Europe

German force characteristics:

morale: 5 control: 5 supply: 9
air assets: Light prop/no player control.

Available German units:

Tank Co: 4 x A7V.
Tank Co: 4 x Mark IV (male).
Tank Co: 4 x Mark IV (female).
InfGun Bty: 4 x 37mm Inf Gun.
Gun Bty: 4 x 76mm Howitzer.
Gun Bty: 6 x 77mm Gun.
Gun Bty: 6 x 105mm Howitzer.
Gun Bty: 6 x 15cm Gun.
Gun Bty: 6 x 21cm Gun.
Mortar Bty: 6 x 90mm Mortar.
Inf Co: 12 x Lt. Rifle Squad.
Stos Co: 12 x Engineer Squad.
MG Co: 6 x HMG.

British force characteristics:

morale: 6 control: 5 supply: 9
air assets: Light prop/no player control.

Available British units:

Tank Co: 4 x Mark IV (male).
Tank Co: 4 x Mark IV (female).
Tank Co: 5 x Whippet.
Tank Co: 10 x Mark V.
Recce Plt: 5 x Austin Armd Car.
Gun Bty: 6 x 4.5" Howitzer.
Gun Bty: 6 x 4.7" Gun.
Gun Bty: 6 x 6" Howitzer.
Gun Bty: 6 x 15 Pdr Gun.
Gun Bty: 6 x 18 Pdr Gun.
Gun Bty: 6 x 60 Pdr Gun.
Mortar Bty: 4 x 3" Mortar.
Mortar Bty: 6 x 6" Mortar.
Mortar Bty: 6 x 9.5" Mortar.
Inf Co: 12 x Lt. Rifle Squad.
MG Co: 4 x HMG.

French force characteristics:

morale: 5 control: 5 supply: 9
air assets: Light prop/no player control.

Available French units:

Tank Co: 4 x Schneider.
Tank Co: 4 x St. Chamond.
Tank Co: 5 x FT-17(MG).
Tank Co: 10 x FT-17.
InfGun Bty: 4 x 37mm Inf Gun.
Gun Bty: 6 x 75mm Gun.
Gun Bty: 6 x 95mm Gun.
Gun Bty: 6 x 4.7" Gun.
Gun Bty: 6 x 120mm Gun.
Gun Bty: 6 x 155mm Gun.
Mortar Bty: 6 x 58mm Mortar.
Mortar Bty: 6 x 3" Mortar.
Inf Co: 12 x Lt. Rifle Squad.
MG Co: 4 x HMG.

American force characteristics:

morale: 7 control: 4 supply: 9
air assets: Light prop/no player control.

Available American units:

Tank Co: 5 x FT-17(MG).
Tank Co: 10 x FT-17.
InfGun Bty: 4 x 37mm Inf Gun.
Gun Bty: 6 x 75mm Gun.
Gun Bty: 6 x 4.7" Gun.
Gun Bty: 6 x 120mm Gun.
Gun Bty: 6 x 155mm Gun.
Mortar Bty: 6 x 3" Mortar.
Mortar Bty: 6 x 6" Mortar.
Inf Co: 12 x Lt. Rifle Squad.
MG Co: 4 x HMG.

2. Blitzkrieg 1939 Europe

German force characteristics:

morale: 9 control: 7 supply: 8
air assets: Heavy prop/no player control.

Available German units:

Lt Pz Plt: 5 x PzKw I.
Lt Pz Plt: 5 x PzKw IIB.
Pz Plt: 5 x PzKw 35t.
Pz Plt: 5 x PzKw 38t.
Pz Plt: 5 x PzKw IIIE.
Pz Plt: 4 x PzKw IV (early).
AA Plt: 2 x SP 20mm AA.
Recce Plt: 7 x SdKfz 221.
Recce Plt: 7 x SdKfz 222.
Recce Plt: 7 x SdKfz 231-6.
Recce Plt: 7 x SdKfz 231-8.
AA Bty: 4 x 20mm AA Gun, 4 x Truck.
AA Bty: 4 x 37mm AA Gun, 4 x Truck.
AA Plt: 2 x SdKfz 10/4.
AT Bty: 4 x 88mm DP Gun, 4 x Truck.
AT Bty: 4 x 37mm AT Gun, 4 x Truck.
Gun Bty: 6 x 75mm Gun, 6 x Truck.
InfGun Bty: 2 x 105mm Inf Gun, 2 x Truck.
Gun Bty: 6 x 105mm Gun, 6 x Truck.
InfGun Bty: 2 x 150mm Inf Gun, 2 x Truck.
Gun Bty: 6 x 150mm Gun, 6 x Truck.
Mortar Sec: 4 x 50mm Mortar, 4 x Truck.
Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
Inf Plt: 4 x Rifle Squad, 4 x Truck.
SMG Plt: 4 x SMG Squad, 4 x Truck.
Eng Plt: 4 x Engineer Squad, 4 x Truck.
Recce Plt: 4 x Lt. Rifle Squad, 4 x Motorcycles.
Recce Plt: 4 x Lt. Rifle Squad, 4 x Bicycles.
MG Plt: 2 x HMG, 2 x Truck.

Polish force characteristics:

morale: 5 control: 7 supply: 6
air assets: none available.

Available Polish units:

Recce Plt: 4 x WZ.29 Armd Car.
Tank Plt: 3 x TK.
Tank Plt: 3 x TKS.

Tank Plt: 4 x Vickers 6 Ton.
Tank Plt: 5 x 7TPdw.
Tank Plt: 5 x 7TPjw.
Tank Plt: 4 x Char Léger R-35.
Tank Plt: 4 x FT-17.
AA Bty: 4 x 40mm AA Gun, 4 x Truck.
Gun Bty: 4 x 75mm Gun, 6 x Truck.
Gun Bty: 6 x 100mm Howitzer, 6 x Truck.
Mortar Sec: 4 x 60mm Mortar, 4 x Truck.
Inf Plt: 4 x Rifle Squad, 4 x Truck.
Eng Plt: 4 x Engineer Squad, 4 x Truck.
Recce Plt: 4 x Lt. Rifle Squad, 4 x Horses.
MG Plt: 2 x HMG, 2 x Truck.

Soviet force characteristics:

morale: 5 control: 6 supply: 7
air assets: Light prop/no player control.

Available Soviet units:

Tank Plt: 3 x BT-5.
Tank Plt: 3 x BT-7.
Tank Plt: 3 x T-26S.
Tank Plt: 3 x T-28 (early).
Tank Plt: 3 x T-35.
Recce Plt: 3 x BA-6 Armd Car.
Recce Plt: 3 x BA-20 Armd Car.
Recce Plt: 3 x BA-32 Armd Car.
AA Plt: 4 x Truck/Quad HMG.
AA Bty: 6 x 37mm AA Gun, 6 x Truck.
AT Bty: 6 x 45mm AT Gun, 6 x Truck.
Gun Bty: 4 x 76mm Howitzer, 4 x Truck.
Gun Bty: 4 x 76mm Gun, 4 x Truck.
Gun Bty: 6 x 122mm Howitzer, 6 x Truck.
Gun Bty: 6 x 122mm Gun, 6 x Truck.
Gun Bty: 6 x 152mm Howitzer, 6 x Truck.
Gun Bty: 6 x 152mm Gun, 6 x Truck.
Gun Bty: 6 x 152mm Field Gun, 6 x Truck.
Mortar Sec: 2 x 50mm Mortar, 2 x Truck.
Mortar Bty: 9 x 82mm Mortar, 9 x Truck.
Mortar Bty: 6 x 120mm Mortar, 6 x Truck.
MRL Bty: 6 x BM-13 Katyusha.
Inf Plt: 3 x Rifle Squad, 3 x Truck.
SMG Plt: 3 x SMG Squad, 3 x Truck.
Eng Plt: 3 x Engineer Squad, 3 x Truck.
Recce Plt: 3 x Lt. Rifle Squad, 3 x Motorcycles.
Recce Plt: 3 x Lt. Rifle Squad, 3 x Horses.
MG Plt: 2 x HMG, 2 x Truck.

3. The Fall of France 1940 Europe, North Africa

German force characteristics:

morale: 8 control: 7 supply: 8
air assets: Heavy prop/no player control.

Available German units:

Lt Pz Plt: 5 x PzKw I.
Lt Pz Plt: 5 x PzKw IIB.
Pz Plt: 5 x PzKw 35t.
Pz Plt: 5 x PzKw 38t.
Pz Plt: 5 x PzKw IIIE.
Pz Plt: 5 x PzKw IIIF.
Pz Plt: 4 x PzKw IV (early).
Recce Plt: 7 x Sdkfz 221.
Recce Plt: 7 x Sdkfz 222.
Recce Plt: 7 x Sdkfz 231-6.
Recce Plt: 7 x Sdkfz 231-8.
PzJ Plt: 3 x PzJg I.
As Gun Bty: 2 x slG 33 SP Gun.
AT Plt: 4 x Sdkfz 251/10.
AA Plt: 2 x Sdkfz 6/2.
AA Plt: 2 x SP 20mm AA.
AA Plt: 2 x Sdkfz 10/4.
AA Bty: 4 x 20mm AA Gun, 4 x Truck.
AA Bty: 4 x 37mm AA Gun, 4 x Truck.
AT Bty: 4 x 88mm DP Gun, 4 x Truck.
AT Bty: 4 x 37mm AT Gun, 4 x Truck.
Gun Bty: 6 x 75mm Gun, 6 x Truck.
InfGun Bty: 2 x 105mm Inf Gun, 2 x Truck.
Gun Bty: 6 x 105mm Gun, 6 x Truck.
InfGun Bty: 2 x 150mm Inf Gun, 2 x Truck.
Gun Bty: 6 x 150mm Gun, 6 x Truck.
Mortar Sec: 4 x 50mm Mortar, 4 x Truck.
Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
Inf Plt: 4 x Rifle Squad, 4 x Truck.
SMG Plt: 4 x SMG Squad, 4 x Truck.
Inf Plt: 4 x Rifle Squad, 4 x Sdkfz 251/1.
SMG Plt: 4 x SMG Squad, 4 x Sdkfz 251/1.
Eng Plt: 4 x Engineer Squad, 4 x Truck.
Recce Plt: 4 x Lt. Rifle Squad, 4 x Motorcycles.
Recce Plt: 4 x Lt. Rifle Squad, 4 x Bicycles.
MG Plt: 2 x HMG, 2 x Truck.

Italian force characteristics:

morale: 5 control: 6 supply: 7
air assets: Light prop/no player control.

Available Italian units:

Recce Plt: 4 x L3/33.
Tank Plt: 4 x M13/40.
As Gun Plt: 4 x M-40/75.
AA Bty: 4 x 20mm AA Gun, 4 x Truck.
AA Bty: 6 x 75mm AA Gun, 6 x Truck.
AA Bty: 4 x 88mm AA Gun, 4 x Truck.
AA Plt: 2 x SP 90mm AA Gun.
AT Bty: 4 x 47mm AT Gun, 4 x Truck.
InfGun Bty: 2 x 65mm Inf Gun, 2 x Truck.
Gun Bty: 6 x 75mm Howitzer, 6 x Truck.
Gun Bty: 6 x 100mm Howitzer, 6 x Truck.
Gun Bty: 6 x 105mm Gun, 6 x Truck.
Mortar Sec: 4 x 45mm Mortar, 4 x Truck.
Mortar Bty: 6 x 81mm Mortar, 4 x Truck.
Inf Plt: 4 x Rifle Squad, 4 x Truck.
Eng Plt: 4 x Engineer Squad, 4 x Truck.
Recce Plt: 4 x Lt. Rifle Squad, 4 x Motorcycles.
MG Plt: 2 x HMG, 2 x Truck.

British force characteristics:

morale: 6 control: 7 supply: 8
air assets: Light prop/no player control.

Available British units:

Tank Plt: 3 x A-9 Cruiser.
Tank Plt: 3 x A-10 Cruiser.
Tank Plt: 3 x Mathilda I.
Tank Plt: 3 x Mathilda II.
Tank Plt: 3 x A-13 Cruiser.
Tank Plt: 3 x Churchill(early).
Tank Plt: 3 x Mk-VI Lt Tank.
Recce Plt: 8 x Scout Carrier.
Recce Plt: 4 x Morris Armd Car.
Recce Plt: 4 x Daimler Scout.
Recce Plt: 4 x Marmon-Herrington.
AA Bty: 4 x 40mm AA Gun, 4 x Truck.
AA Plt: 2 x SP 40mm AA.
AT Bty: 4 x 2 Pdr AT Gun, 4 x Truck.
Gun Bty: 6 x 3" Howitzer, 6 x Truck.

Gun Bty: 6 x 18 Pdr Gun, 6 x Truck.
Gun Bty: 6 x 25 Pdr Gun, 6 x Truck.
Gun Bty: 6 x 6" Gun, 6 x Truck.
Mortar Sec: 4 x 50mm Mortar, 4 x Truck.
Mortar Bty: 4 x 76mm Mortar, 4 x Truck.
Mortar Bty: 4 x 3" Mortar, 4 x Truck.
Mortar Bty: 4 x 4.2" Mortar, 4 x Truck.
Inf Plt: 3 x Rifle Squad, 3 x Truck.
Inf Plt: 3 x Rifle Squad, 3 x Carrier.
Eng Plt: 3 x Engineer Squad, 3 x Truck.
MG Plt: 2 x HMG, 2 x Truck.

French force characteristics:

morale: 5 control: 6 supply: 9
air assets: Light prop/no player control.

Available French units:

Tank Plt: 3 x Char B1.
Tank Plt: 3 x Char Léger S-35.
Tank Plt: 3 x Char Léger R-35.
Tank Plt: 3 x Char Léger H-39.
Tank Plt: 3 x Char DC H-35.
Tank Plt: 3 x FT-17.
Recce Plt: 3 x Renault AMR-35.
Recce Plt: 3 x FCM-36.
Recce Plt: 5 x Panhard-178.
AT Bty: 4 x 25mm AT Gun, 4 x Tracteur UE.
AT Bty: 4 x 47mm AT Gun, 4 x Tracteur UE.
InfGun Bty: 4 x 37mm Inf Gun.
Gun Bty: 4 x 75mm Gun, 4 x Truck.
Gun Bty: 6 x 105mm Gun, 6 x Truck.
Gun Bty: 6 x 155mm Gun, 6 x Truck.
Mortar Sec: 4 x 60mm Mortar, 4 x Tracteur UE.
Mortar Bty: 4 x 81mm Mortar, 4 x Tracteur UE.
Inf Plt: 4 x Rifle Squad, 4 x Truck.
MG Plt: 6 x HMG, 6 x Truck.
Eng Plt: 4 x Engineer Squad, 4 x Truck.
Recce Plt: 4 x Lt. Rifle Squad, 4 x Motorcycles.

4. Barbarossa 1941 Europe, North Africa

German force characteristics:

morale: 7 control: 7 supply: 7
air assets: Heavy prop/no player control.

Available German units:

Lt Pz Plt: 7 x PzKw I.
Lt Pz Plt: 7 x PzKw IIF.
Pz Plt: 5 x PzKw 35t.
Pz Plt: 5 x PzKw 38t.
Pz Plt: 5 x PzKw IIIE.
Pz Plt: 5 x PzKw IIIF.
Pz Plt: 5 x PzKw IIIF.
Pz Plt: 5 x PzKw IIIF.
Pz Plt: 5 x PzKw IV (early).
Pz Plt: 5 x PzKw IVE.
Pz Plt: 5 x PzKw IVF1.
Recce Plt: 7 x Sdkfz 221.
Recce Plt: 7 x Sdkfz 222.
Recce Plt: 7 x Sdkfz 231-6.
Recce Plt: 7 x Sdkfz 231-8.
PzJ Plt: 3 x PzJg I.
As Gun Plt: 4 x StuG III (early).
As Gun Bty: 2 x slG 33 SP Gun.
AT Plt: 4 x Sdkfz 251/10.
AA Plt: 2 x Sdkfz 6/2.
AA Plt: 2 x SP 20mm AA.
AA Plt: 2 x Sdkfz 10/4.
AA Bty: 4 x 20mm AA Gun, 4 x Truck.
AA Bty: 4 x 37mm AA Gun, 4 x Truck.
AT Bty: 4 x 88mm DP Gun, 4 x Truck.
AT Bty: 6 x 37mm AT Gun, 6 x Truck.
AT Bty: 4 x 50mm AT Gun, 4 x Truck.
Gun Bty: 6 x 75mm Gun, 6 x Truck.
InfGun Bty: 2 x 105mm Inf Gun, 2 x Truck.
Gun Bty: 6 x 105mm Gun, 6 x Truck.
InfGun Bty: 2 x 150mm Inf Gun, 2 x Truck.
Gun Bty: 6 x 150mm Gun, 6 x Truck.
Gun Bty: 6 x 170mm Gun, 6 x Truck.
Mortar Sec: 4 x 50mm Mortar, 4 x Truck.
Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
Inf Plt: 4 x Rifle Squad, 4 x Truck.
SMG Plt: 4 x SMG Squad, 4 x Truck.
Inf Plt: 4 x Rifle Squad, 4 x Sdkfz 251/1.
SMG Plt: 4 x SMG Squad, 4 x Sdkfz 251/1.
Eng Plt: 4 x Engineer Squad, 4 x Truck.
Recce Plt: 4 x Lt. Rifle Squad, 4 x Motorcycles.
Recce Plt: 4 x Lt. Rifle Squad, 4 x Bicycles.
MG Plt: 2 x HMG, 2 x Truck.

Italian force characteristics:

morale: 5 control: 6 supply: 7
air assets: Light prop/no player control.

Available Italian units:

Tank Plt: 4 x M13/40.
Recce Plt: 4 x Autoblindata-41.
Recce Plt: 4 x L3/33.
Recce Plt: 4 x L6/40.
As Gun Bty: 4 x M-40/75.
AA Bty: 4 x 20mm AA Gun, 4 x Truck.
AA Bty: 6 x 75mm AA Gun, 6 x Truck.
AA Bty: 4 x 88mm AA Gun, 4 x Truck.
AA Plt: 2 x SP 90mm AA Gun.
AT Bty: 4 x 47mm AT Gun, 4 x Truck.
InfGun Bty: 2 x 65mm Inf Gun, 2 x Truck.
Gun Bty: 6 x 75mm Howitzer, 6 x Truck.
Gun Bty: 6 x 100mm Howitzer, 6 x Truck.
Gun Bty: 6 x 105mm Gun, 6 x Truck.
Mortar Sec: 4 x 45mm Mortar, 4 x Truck.
Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
Inf Plt: 4 x Rifle Squad, 4 x Truck.
Eng Plt: 4 x Engineer Squad, 4 x Truck.
Recce Plt: 4 x Lt. Rifle Squad, 4 x Motorcycles.
MG Plt: 2 x HMG, 2 x Truck.

British force characteristics:

morale: 6 control: 7 supply: 8
air assets: Light prop/no player control.

Available British units:

Tank Plt: 3 x A-9 Cruiser.
Tank Plt: 3 x A-10 Cruiser.
Tank Plt: 3 x Mathilda II.
Supt Plt: 3 x A-15 CS.
Tank Plt: 3 x Valentine(early).
Tank Plt: 3 x Churchill(early).
Tank Plt: 3 x Mk-VI Lt Tank.
Recce Plt: 8 x Scout Carrier.
Recce Plt: 4 x Morris Arm'd Car.
Recce Plt: 4 x Daimler Scout.
Recce Plt: 4 x Humber III.
Recce Plt: 4 x Marmon-Herringtn.
Recce Plt: 4 x Daimler II.
SP Gun Bty: 6 x Bishop SP Gun.
AA Bty: 4 x 40mm AA Gun, 4 x Truck.
AA Plt: 2 x SP 40mm AA.
AT Bty: 4 x 2 Pdr AT Gun, 4 x Truck.
Gun Bty: 6 x 3" Howitzer, 6 x Truck.
Gun Bty: 6 x 18 Pdr Gun, 6 x Truck.
Gun Bty: 6 x 25 Pdr Gun, 6 x Truck.

Gun Bty: 6 x 6" Gun, 6 x Truck.
Mortar Sec: 4 x 50mm Mortar, 4 x Truck.
Mortar Bty: 4 x 76mm Mortar, 4 x Truck.
Mortar Bty: 4 x 3" Mortar, 4 x Truck.
Mortar Bty: 4 x 4.2" Mortar, 4 x Truck.
Inf Plt: 3 x Rifle Squad, 3 x Truck.
Inf Plt: 3 x Rifle Squad, 3 x Carrier.
Eng Plt: 3 x Engineer Squad, 3 x Truck.
MG Plt: 2 x HMG, 2 x Truck.

Soviet force characteristics:

morale: 4 control: 6 supply: 7
air assets: Light prop/no player control.

Available Soviet units:

Tank Plt: 3 x BT-5.
Tank Plt: 3 x BT-7.
Tank Plt: 3 x T-26S.
Tank Plt: 3 x T-28 (early).
Tank Plt: 3 x T-28 (late).
Tank Plt: 3 x T-34/76 (early).
Tank Plt: 3 x T-35.
L Tank Plt: 3 x T-40.
L Tank Plt: 3 x T-60.
Tank Plt: 3 x KV-I (early).
As Gun Plt: 3 x KV-II.
Recce Plt: 3 x BA-6 Arm'd Car.
Recce Plt: 3 x BA-20 Arm'd Car.
Recce Plt: 3 x BA-32 Arm'd Car.
AA Plt: 4 x Truck/Quad HMG.
AA Bty: 6 x 37mm AA Gun, 6 x Truck.
AT Bty: 6 x 45mm AT Gun, 6 x Truck.
AT Bty: 6 x 57mm AT Gun, 6 x Truck.
AT Bty: 6 x 76mm AT Gun, 6 x Truck.
Gun Bty: 4 x 76mm Howitzer, 4 x Truck.
Gun Bty: 4 x 76mm Gun, 4 x Truck.
Gun Bty: 6 x 122mm Howitzer, 6 x Truck.
Gun Bty: 6 x 122mm Gun, 6 x Truck.
Gun Bty: 6 x 152mm Howitzer, 6 x Truck.
Gun Bty: 6 x 152mm Gun, 6 x Truck.
Gun Bty: 6 x 152mm Field Gun, 6 x Truck.
Mortar Sec: 2 x 50mm Mortar, 2 x Truck.
Mortar Bty: 9 x 82mm Mortar, 9 x Truck.
Mortar Bty: 6 x 120mm Mortar, 6 x Truck.
MRL Bty: 6 x BM-13 Katyusha.
Inf Plt: 3 x Rifle Squad, 3 x Truck.
SMG Plt: 3 x SMG Squad, 3 x Truck.
Eng Plt: 3 x Engineer Squad, 3 x Truck.
Recce Plt: 3 x Lt. Rifle Squad, 3 x Motorcycles.
Recce Plt: 3 x Lt. Rifle Squad, 3 x Horses.
MG Plt: 2 x HMG, 2 x Truck.

5. Stalingrad 1942 Europe, North Africa

German force characteristics:

morale: 7 control: 7 supply: 7
air assets: Heavy prop/no player control.

Available German units:

Lt Pz Plt: 7 x PzKw IIF.
Pz Plt: 5 x PzKw 38t.
Pz Plt: 5 x PzKw IIIE.
Pz Plt: 5 x PzKw IIIF.
Pz Plt: 5 x PzKw IIH.
Pz Plt: 5 x PzKw IIJ.
Pz Plt: 5 x PzKw IIIL.
Pz Plt: 5 x PzKw IV (early).
Pz Plt: 5 x PzKw IVE.
Pz Plt: 5 x PzKw IVF1.
Pz Plt: 5 x PzKw IVF2.
Pz Plt: 4 x PzKw VI Tiger I.
Recce Plt: 7 x SdKfz 221.
Recce Plt: 7 x SdKfz 222.
JPz Plt: 4 x Marder.
As Gun Plt: 4 x StuG III (early).
As Gun Plt: 4 x StuG III (late).
As Gun Plt: 4 x StuH 42 SP Gun.
As Gun Bty: 2 x sIG 33 SP Gun.
As Gun Bty: 2 x Gw II SP Gun.
AT Plt: 4 x SdKfz 251/9.
AT Plt: 4 x SdKfz 251/10.
AA Plt: 2 x SdKfz 10/4.
AA Plt: 2 x SdKfz 6/2.
AA Plt: 3 x SdKfz 7/1.
AA Plt: 2 x SP 20mm AA.
AA Bty: 4 x 20mm AA Gun, 4 x Truck.
AA Bty: 4 x 37mm AA Gun, 4 x Truck.
AT Bty: 4 x 88mm DP Gun, 4 x Truck.
AT Bty: 6 x 37mm AT Gun, 6 x Truck.
AT Bty: 6 x 50mm AT Gun, 6 x Truck.
AT Bty: 4 x 75mm AT Gun, 4 x Truck.
Gun Bty: 6 x 75mm Gun, 6 x Truck.
InfGun Bty: 2 x 105mm Inf Gun, 2 x Truck.
Gun Bty: 6 x 105mm Gun, 6 x Truck.
InfGun Bty: 2 x 150mm Inf Gun, 2 x Truck.
Gun Bty: 6 x 150mm Gun, 6 x Truck.
Gun Bty: 6 x 170mm Gun, 6 x Truck.
MRL Bty: 6 x Nebelwerfer, 6 x Truck.
Mortar Sec: 4 x 50mm Mortar, 4 x Truck.
Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
Mortar Bty: 4 x 120mm Mortar, 4 x Truck.

Inf Plt: 4 x Rifle Squad, 4 x Truck.
SMG Plt: 4 x SMG Squad, 4 x Truck.
Inf Plt: 4 x Rifle Squad, 4 x SdKfz 251/1.
SMG Plt: 4 x SMG Squad, 4 x SdKfz 251/1.
Eng Plt: 4 x Engineer Squad, 4 x Truck.
Recce Plt: 4 x Lt. Rifle Squad, 4 x Motorcycles.
Recce Plt: 4 x Lt. Rifle Squad, 4 x Bicycles.
MG Plt: 2 x HMG, 2 x Truck.

Italian force characteristics:

morale: 5 control: 6 supply: 6
air assets: Light prop/no player control.

Available Italian units:

Tank Plt: 4 x M13/40.
Tank Plt: 4 x M14/41.
Recce Plt: 4 x Autoblindata-41.
Recce Plt: 4 x L3/33.
Recce Plt: 4 x L6/40.
As Gun Bty: 4 x M-40/75.
AA Bty: 4 x 20mm AA Gun, 4 x Truck.
AA Bty: 6 x 75mm AA Gun, 6 x Truck.
AA Bty: 4 x 88mm AA Gun, 4 x Truck.
AA Plt: 2 x SP 90mm AA Gun.
AT Bty: 4 x 47mm AT Gun, 4 x Truck.
InfGun Bty: 2 x 65mm Inf Gun, 2 x Truck.
Gun Bty: 6 x 75mm Howitzer, 6 x Truck.
Gun Bty: 6 x 100mm Howitzer, 6 x Truck.
Gun Bty: 6 x 105mm Gun, 6 x Truck.
Mortar Sec: 4 x 45mm Mortar, 4 x Truck.
Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
Inf Plt: 4 x Rifle Squad, 4 x Truck.
Eng Plt: 4 x Engineer Squad, 4 x Truck.
Recce Plt: 4 x Lt. Rifle Squad, 4 x Motorcycles.
MG Plt: 2 x HMG, 2 x Truck.

British force characteristics:

morale: 7 control: 7 supply: 8
air assets: Heavy prop/partial player control.

Available British units:

Tank Plt: 3 x M4/75 Sherman.
Tank Plt: 3 x M3 Stuart.
Tank Plt: 3 x M3 Lee.
Tank Plt: 3 x Mathilda II.
Supt Plt: 3 x A-15 CS.
Tank Plt: 3 x Crusader II.
Tank Plt: 3 x Crusader III.
Tank Plt: 3 x Valentine(early).
Tank Plt: 3 x Valentine (late).

Tank Plt: 3 x Churchill(early).
 Tank Plt: 3 x Mk-VI Lt Tank.
 Recce Plt: 8 x Scout Carrier.
 Recce Plt: 4 x Morris Armd Car.
 Recce Plt: 4 x Daimler Scout.
 Recce Plt: 4 x Humber III.
 Recce Plt: 4 x Humber Scout.
 Recce Plt: 4 x Marmon-Herrington.
 Recce Plt: 4 x Daimler II.
 SP Gun Bty: 6 x Bishop SP Gun.
 AA Bty: 4 x 40mm AA Gun, 4 x Truck.
 AA Plt: 2 x SP 40mm AA.
 AT Bty: 4 x 2 Pdr AT Gun, 4 x Truck.
 AT Bty: 4 x 17 Pdr AT Gun, 4 x Truck.
 Gun Bty: 6 x 3" Howitzer, 6 x Truck.
 Gun Bty: 6 x 18 Pdr Gun, 6 x Truck.
 Gun Bty: 6 x 25 Pdr Gun, 6 x Truck.
 Gun Bty: 6 x 6" Gun, 6 x Truck.
 Mortar Sec: 4 x 50mm Mortar, 4 x Truck.
 Mortar Bty: 4 x 76mm Mortar, 4 x Truck.
 Mortar Bty: 4 x 3" Mortar, 4 x Truck.
 Mortar Bty: 4 x 4.2" Mortar, 4 x Truck.
 Inf Plt: 3 x Rifle Squad, 3 x Truck.
 Inf Plt: 3 x Rifle Squad, 3 x Carrier.
 Eng Plt: 3 x Engineer Squad, 3 x Truck.
 MG Plt: 2 x HMG, 2 x Truck.

Soviet force characteristics:

morale: 6 control: 6 supply: 8
 air assets: Heavy prop/no player control.

Available Soviet units:

Tank Plt: 3 x T-26S.
 Tank Plt: 3 x T-34/76 (early).
 L Tank Plt: 3 x T-60.
 L Tank Plt: 3 x T-70.
 Tank Plt: 3 x KV-I (early).
 Tank Plt: 3 x KV-I (late).
 As Gun Plt: 3 x KV-II.
 Recce Plt: 3 x BA-6 Armd Car.
 Recce Plt: 3 x BA-20 Armd Car.
 Recce Plt: 3 x BA-32 Armd Car.
 Recce Plt: 3 x BA-64 Armd Car.
 AA Plt: 4 x Truck/Quad HMG.
 AA Bty: 6 x 37mm AA Gun, 6 x Truck.
 AT Bty: 6 x 45mm AT Gun, 6 x Truck.
 AT Bty: 6 x 57mm AT Gun, 6 x Truck.
 AT Bty: 6 x 76mm AT Gun, 6 x Truck.
 Gun Bty: 4 x 76mm Howitzer, 4 x Truck.
 Gun Bty: 4 x 76mm Gun, 4 x Truck.

Gun Bty: 6 x 122mm Howitzer, 6 x Truck.
 Gun Bty: 6 x 122mm Gun, 6 x Truck.
 Gun Bty: 6 x 152mm Howitzer, 6 x Truck.
 Gun Bty: 6 x 152mm Gun, 6 x Truck.
 Gun Bty: 6 x 152mm Field Gun, 6 x Truck.
 Mortar Sec: 2 x 50mm Mortar, 2 x Truck.
 Mortar Bty: 9 x 82mm Mortar, 9 x Truck.
 Mortar Bty: 6 x 120mm Mortar, 6 x Truck.
 MRL Bty: 6 x BM-13 Katyusha.
 Inf Plt: 3 x Rifle Squad, 3 x Truck.
 SMG Plt: 3 x SMG Squad, 3 x Truck.
 Eng Plt: 3 x Engineer Squad, 3 x Truck.
 Recce Plt: 3 x Lt. Rifle Squad, 3 x Motorcycles.
 Recce Plt: 3 x Lt. Rifle Squad, 3 x Horses.
 MG Plt: 2 x HMG, 2 x Truck.

American force characteristics:

morale: 6 control: 6 supply: 9
 air assets: Heavy prop/partial player control.

Available American units:

Tank Plt: 5 x M3 Stuart.
 Tank Plt: 5 x M5 Stuart.
 Tank Plt: 5 x M3 Lee.
 Tank Plt: 5 x M4/75 Sherman.
 SP Gun Bty: 6 x M7 HMC Priest.
 SP Gun Plt: 3 x M8 HMC.
 AT Plt: 4 x M2 GMC.
 AT Plt: 4 x M3 GMC.
 AT Plt: 4 x M10 GMC Wolverine.
 AA Plt: 4 x T28 MGMC.
 SP Gun Bty: 4 x T30 HMC.
 AA Bty: 6 x 40mm AA Gun, 6 x Truck.
 AT Bty: 4 x 37mm AT Gun, 4 x Truck.
 AT Bty: 4 x 37mm AT Gun, 4 x Halftrack.
 AT Bty: 4 x 57mm AT Gun, 4 x Truck.
 Gun Bty: 6 x 105mm Gun, 6 x Truck.
 Gun Bty: 6 x 155mm Howitzer, 6 x Truck.
 Gun Bty: 6 x 155mm Gun, 6 x Truck.
 Gun Bty: 6 x 8" Gun, 6 x Truck.
 Mortar Sec: 4 x 60mm Mortar, 4 x Truck.
 Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
 Mortar Bty: 3 x M4 SP Mortar.
 Recce Plt: 4 x Jeep.
 Recce Plt: 4 x M3A1 Scout Car.
 Inf Plt: 3 x Rifle Squad, 3 x Truck.
 Inf Plt: 3 x Rifle Squad, 3 x Halftrack.
 Eng Plt: 3 x Engineer Squad, 3 x Truck.
 MG Plt: 2 x HMG, 2 x Truck.
 MG Plt: 2 x HMG, 2 x Halftrack.

6. Kursk 1943 Europe, North Africa

German force characteristics:

morale: 7 control: 7 supply: 7
 air assets: Heavy prop/no player control.

Available German units:

Recce Plt: 6 x PzKw IIF.
 Recce Plt: 6 x PzKw IIL.
 Pz Plt: 5 x PzKw IIIF.
 Pz Plt: 5 x PzKw IIHF.
 Pz Plt: 5 x PzKw IIJJ.
 Pz Plt: 5 x PzKw IIIL.
 Pz Plt: 5 x PzKw IIIN.
 Pz Plt: 5 x PzKw IV (early).
 Pz Plt: 5 x PzKw IVE.
 Pz Plt: 5 x PzKw IVF1.
 Pz Plt: 5 x PzKw IVF2.
 Pz Plt: 5 x PzKw IVH.
 Pz Plt: 4 x PzKw VI Tiger I.
 Pz Plt: 5 x PzKw V Panther.
 Recce Plt: 7 x SdKfz 221.
 Recce Plt: 7 x SdKfz 222.
 JPz Plt: 4 x Marder.
 JPz Plt: 4 x Nashorn.
 JPz Plt: 4 x Elefant.
 As Gun Plt: 4 x StuG III (early).
 As Gun Plt: 4 x StuG III (late).
 As Gun Plt: 4 x StuH 42 SP Gun.
 As Gun Plt: 4 x StuG IV.
 As Gun Bty: 2 x sIG 33 SP Gun.
 As Gun Bty: 2 x Gw 38 SP Gun.
 SP Gun Bty: 6 x Wespe SP Gun.
 SP Gun Bty: 6 x Hummel SP Gun.
 AT Plt: 4 x SdKfz 251/9.
 AT Plt: 4 x SdKfz 251/10.
 AA Plt: 2 x SdKfz 10/4.
 AA Plt: 2 x SdKfz 6/2.
 AA Plt: 3 x SdKfz 7/1.
 AA Plt: 2 x SP 20mm AA.
 AA Bty: 4 x 20mm AA Gun, 4 x Truck.
 AA Bty: 4 x 37mm AA Gun, 4 x Truck.
 AT Bty: 4 x 88mm DP Gun, 4 x Truck.
 AT Bty: 6 x 37mm AT Gun, 6 x Truck.
 AT Bty: 6 x 50mm AT Gun, 6 x Truck.
 AT Bty: 4 x 75mm AT Gun, 4 x Truck.

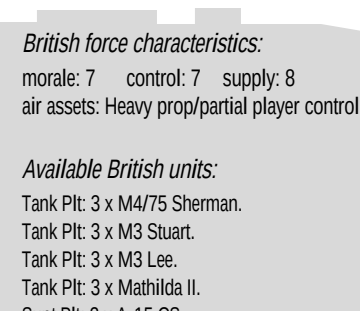
Gun Bty: 6 x 75mm Gun, 6 x Truck.
 InfGun Bty: 2 x 105mm Inf Gun, 2 x Truck.
 Gun Bty: 6 x 105mm Gun, 6 x Truck.
 InfGun Bty: 2 x 150mm Inf Gun, 2 x Truck.
 Gun Bty: 6 x 150mm Gun, 6 x Truck.
 Gun Bty: 6 x 170mm Gun, 6 x Truck.
 MRL Bty: 6 x Nebelwerfer, 6 x Truck.
 Mortar Sec: 4 x 50mm Mortar, 4 x Truck.
 Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
 Mortar Bty: 4 x 120mm Mortar, 4 x Truck.
 Inf Plt: 4 x Rifle Squad, 4 x Truck.
 SMG Plt: 4 x SMG Squad, 4 x Truck.
 Eng Plt: 4 x Engineer Squad, 4 x Truck.
 Inf Plt: 4 x Rifle Squad, 4 x SdKfz 251/1.
 SMG Plt: 4 x SMG Squad, 4 x SdKfz 251/1.
 Eng Plt: 4 x Engineer Squad, 4 x SdKfz 251/1.
 Recce Plt: 4 x Lt. Rifle Squad, 4 x Motorcycles.
 Recce Plt: 4 x Lt. Rifle Squad, 4 x Bicycles.
 MG Plt: 2 x HMG, 2 x Truck.

British force characteristics:

morale: 7 control: 7 supply: 8
 air assets: Heavy prop/partial player control.

Available British units:

Tank Plt: 3 x M4/75 Sherman.
 Tank Plt: 3 x M3 Stuart.
 Tank Plt: 3 x M3 Lee.
 Tank Plt: 3 x Mathilda II.
 Supt Plt: 3 x A-15 CS.
 Tank Plt: 3 x Crusader II.
 Tank Plt: 3 x Crusader III.
 Tank Plt: 3 x Valentine(early).
 Tank Plt: 3 x Valentine (late).
 Tank Plt: 3 x Churchill(early).
 Recce Plt: 4 x M3A1 Scout Car.
 Recce Plt: 8 x Scout Carrier.
 Recce Plt: 4 x Daimler Scout.
 Recce Plt: 4 x Humber III.
 Recce Plt: 4 x Humber Scout.
 Recce Plt: 4 x Marmon-Herrington.
 Recce Plt: 4 x Daimler II.
 SP Gun Bty: 6 x Bishop SP Gun.
 SP Gun Bty: 6 x Sexton SP Gun.
 SP Gun Bty: 6 x M7 HMC Priest.
 AA Plt: 6 x Crusader AA.
 AA Bty: 4 x 40mm AA Gun, 4 x Truck.
 AA Plt: 2 x SP 40mm AA.
 AT Bty: 4 x 17 Pdr AT Gun, 4 x Truck.



Gun Bty: 6 x 3" Howitzer, 6 x Truck.
 Gun Bty: 6 x 18 Pdr Gun, 6 x Truck.
 Gun Bty: 6 x 25 Pdr Gun, 6 x Truck.
 Gun Bty: 6 x 6" Gun, 6 x Truck.
 Mortar Sec: 4 x 50mm Mortar, 4 x Truck.
 Mortar Bty: 4 x 76mm Mortar, 4 x Truck.
 Mortar Bty: 4 x 3" Mortar, 4 x Truck.
 Mortar Bty: 4 x 4.2" Mortar, 4 x Truck.
 Inf Plt: 3 x Rifle Squad, 3 x Truck.
 Inf Plt: 3 x Rifle Squad, 3 x Carrier.
 Eng Plt: 3 x Engineer Squad, 3 x Truck.
 MG Plt: 2 x HMG, 2 x Truck.

Soviet force characteristics:

morale: 7 control: 6 supply: 8
 air assets: Heavy prop/no player control.

Available Soviet units:

Tank Plt: 3 x M3 Lee.
 Tank Plt: 3 x T-34/76 (early).
 Tank Plt: 3 x T-34/76 (late).
 L Tank Plt: 3 x T-60.
 L Tank Plt: 3 x T-70.
 Tank Plt: 3 x KV-I (late).
 Tank Plt: 3 x KV-85.
 Recce Plt: 3 x BA-6 Armd Car.
 Recce Plt: 3 x BA-32 Armd Car.
 Recce Plt: 3 x BA-64 Armd Car.
 TD Plt: 3 x SU-57.
 TD Plt: 3 x SU-76.
 TD Plt: 3 x SU-85.
 As Gun Plt: 3 x SU-122.
 As Gun Plt: 3 x SU-152.
 AA Plt: 4 x Truck/Quad HMG.
 AA Bty: 6 x 37mm AA Gun, 6 x Truck.
 AT Bty: 6 x 45mm AT Gun, 6 x Truck.
 AT Bty: 6 x 57mm AT Gun, 6 x Truck.
 AT Bty: 6 x 76mm AT Gun, 6 x Truck.
 Gun Bty: 4 x 76mm Howitzer, 4 x Truck.
 Gun Bty: 4 x 76mm Gun, 4 x Truck.
 Gun Bty: 6 x 122mm Howitzer, 6 x Truck.
 Gun Bty: 6 x 122mm Gun, 6 x Truck.
 Gun Bty: 6 x 152mm Howitzer, 6 x Truck.
 Gun Bty: 6 x 152mm Gun, 6 x Truck.
 Gun Bty: 6 x 152mm Field Gun, 6 x Truck.
 Mortar Sec: 2 x 50mm Mortar, 2 x Truck.
 Mortar Bty: 9 x 82mm Mortar, 9 x Truck.
 Mortar Bty: 6 x 120mm Mortar, 6 x Truck.

MRL Bty: 6 x BM-13 Katyusha.
 Inf Plt: 3 x Rifle Squad, 3 x Truck.
 SMG Plt: 3 x SMG Squad, 3 x Truck.
 Eng Plt: 3 x Engineer Squad, 3 x Truck.
 Recce Plt: 3 x Lt. Rifle Squad, 3 x Motorcycles.
 Recce Plt: 3 x Lt. Rifle Squad, 3 x Horses.
 Recce Plt: 3 x Lt. Rifle Squad, 3 x Halftrack.
 MG Plt: 2 x HMG, 2 x Truck.

American force characteristics:

morale: 6 control: 6 supply: 9
 air assets: Heavy prop/partial player control.

Available American units:

Tank Plt: 5 x M3 Stuart.
 Tank Plt: 5 x M5 Stuart.
 Tank Plt: 5 x M3 Lee.
 Tank Plt: 5 x M4/75 Sherman.
 SP Gun Bty: 6 x M7 HMC Priest.
 SP Gun Plt: 3 x M8 HMC.
 SP Gun Bty: 6 x M12 HMC.
 AT Plt: 4 x M2 GMC.
 AT Plt: 4 x M3 GMC.
 AT Plt: 4 x M10 GMC Wolverine.
 AA Plt: 4 x M16 MGMC.
 AA Plt: 4 x T28 MGMC.
 SP Gun Bty: 4 x T30 HMC.
 AA Bty: 6 x 40mm AA Gun, 6 x Truck.
 AT Bty: 4 x 57mm AT Gun, 4 x Halftrack.
 AT Bty: 4 x 57mm AT Gun, 4 x Truck.
 Gun Bty: 6 x 105mm Gun, 6 x Truck.
 Gun Bty: 6 x 155mm Howitzer, 6 x Truck.
 Gun Bty: 6 x 155mm Gun, 6 x Truck.
 Gun Bty: 6 x 8" Gun, 6 x Truck.
 Mortar Sec: 4 x 60mm Mortar, 4 x Truck.
 Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
 Mortar Bty: 3 x M4 SP Mortar.
 Recce Plt: 4 x Jeep.
 Recce Plt: 4 x M3A1 Scout Car.
 Recce Plt: 6 x M8 Greyhound.
 Recce Plt: 6 x M20 Armd Car.
 SMG Plt: 3 x SMG/RL Squad, 3 x Truck.
 Inf Plt: 3 x Rifle/RL Squad, 3 x Truck.
 Inf Plt: 3 x Rifle/RL Squad, 3 x Halftrack.
 Eng Plt: 3 x Engineer Squad, 3 x Truck.
 MG Plt: 3 x HMG, 3 x Truck.
 MG Plt: 3 x HMG, 3 x Halftrack.

7. Fortress Europa 1944 Europe

German force characteristics:

morale: 7 control: 7 supply: 7
 air assets: Heavy prop/no player control.

Available German units:

Recce Plt: 6 x PzKw IIL.
 Pz Plt: 5 x PzKw IIIL.
 Pz Plt: 5 x PzKw IIIL.
 Pz Plt: 5 x PzKw IIIL.
 Pz Plt: 5 x PzKw IVF1.
 Pz Plt: 5 x PzKw IVF2.
 Pz Plt: 5 x PzKw IVH.
 Pz Plt: 4 x PzKw VI Tiger I.
 Pz Plt: 4 x PzKw VI Tiger II.
 Pz Plt: 5 x PzKw V Panther.
 Recce Plt: 7 x SdKfz 221.
 Recce Plt: 7 x SdKfz 222.
 Recce Plt: 7 x SdKfz 234/1.
 Recce Plt: 7 x SdKfz 234/2.
 JPz Plt: 4 x Marder.
 JPz Plt: 4 x JPz 38 Hetzer.
 JPz Plt: 4 x JPz IV.
 JPz Plt: 4 x Nashorn.
 JPz Plt: 4 x Elefant.
 JPz Plt: 4 x JPz V JagdPanthr.
 As Gun Plt: 4 x StuG III (late).
 As Gun Plt: 4 x StuH 42 SP Gun.
 As Gun Plt: 4 x StuG IV.
 As Gun Plt: 3 x StuPz IV Brumbar.
 As Gun Bty: 2 x Gw 38 SP Gun.
 SP Gun Bty: 6 x Wespe SP Gun.
 SP Gun Bty: 6 x Hummel SP Gun.
 FPz Plt: 3 x Wirbelwind.
 AT Plt: 4 x SdKfz 251/9.
 AT Plt: 4 x SdKfz 251/10.
 AA Plt: 2 x SdKfz 10/4.
 AA Plt: 2 x SdKfz 6/2.
 AA Plt: 3 x SdKfz 7/1.
 AA Plt: 2 x SP 20mm AA.
 AA Bty: 4 x 20mm AA Gun, 4 x Truck.
 AA Bty: 4 x 37mm AA Gun, 4 x Truck.
 AT Bty: 4 x 88mm DP Gun, 4 x Truck.
 AT Bty: 6 x 37mm AT Gun, 6 x Truck.
 AT Bty: 6 x 50mm AT Gun, 6 x Truck.
 AT Bty: 4 x 75mm AT Gun, 4 x Truck.
 Gun Bty: 6 x 75mm Gun, 6 x Truck.

InfGun Bty: 2 x 105mm Inf Gun, 2 x Truck.
 Gun Bty: 6 x 105mm Gun, 6 x Truck.
 InfGun Bty: 2 x 150mm Inf Gun, 2 x Truck.
 Gun Bty: 6 x 150mm Gun, 6 x Truck.
 Gun Bty: 6 x 170mm Gun, 6 x Truck.
 MRL Bty: 6 x Nebelwerfer, 6 x Truck.
 PzWr Bty: 6 x Panzerwerfer 42.
 Mortar Sec: 4 x 50mm Mortar, 4 x Truck.
 Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
 Mortar Bty: 4 x 120mm Mortar, 4 x Truck.
 Inf Plt: 4 x Rifle/HRL Squad, 4 x Truck.
 SMG Plt: 4 x SMG/HRL Squad, 4 x Truck.
 Eng Plt: 4 x Engineer Squad, 4 x Truck.
 Inf Plt: 4 x Rifle/HRL Squad, 4 x SdKfz 251/1.
 SMG Plt: 4 x SMG/HRL Squad, 4 x SdKfz 251/1.
 Eng Plt: 4 x Engineer Squad, 4 x SdKfz 251/1.
 Recce Plt: 4 x Lt. Rifle Squad, 4 x Motorcycles.
 Recce Plt: 4 x Lt. Rifle Squad, 4 x Bicycles.
 MG Plt: 2 x HMG, 2 x Truck.

British force characteristics:

morale: 7 control: 7 supply: 9
 air assets: Heavy prop/partial player control.

Available British units:

Tank Plt: 4 x M4/75 Sherman.
 Tank Plt: 4 x M3 Stuart.
 Supt Plt: 3 x A-15 CS.
 Tank Plt: 4 x Crusader III.
 Tank Plt: 4 x Churchill(early).
 Tank Plt: 4 x Churchill (late).
 Tank Plt: 4 x Firefly.
 Tank Plt: 4 x Cromwell.
 Recce Plt: 4 x M3A1 Scout Car.
 Recce Plt: 8 x Scout Carrier.
 Recce Plt: 4 x Daimler Scout.
 Recce Plt: 4 x Humber III.
 Recce Plt: 4 x Humber Scout.
 Recce Plt: 4 x Marmon-Herrington.
 Recce Plt: 4 x Daimler II.
 Recce Plt: 4 x Staghound.
 Recce Plt: 4 x AEC Armd Car.
 TD Plt: 4 x Achilles.
 SP Gun Bty: 6 x Sexton SP Gun.
 SP Gun Bty: 6 x M7 HMC Priest.
 AA Plt: 6 x Crusader AA.
 AA Bty: 4 x 40mm AA Gun, 4 x Truck.
 AA Plt: 2 x SP 40mm AA.
 AT Bty: 4 x 17 Pdr AT Gun, 4 x Truck.
 Gun Bty: 6 x 3" Howitzer, 6 x Truck.

Gun Bty: 6 x 18 Pdr Gun, 6 x Truck.
 Gun Bty: 6 x 25 Pdr Gun, 6 x Truck.
 Gun Bty: 6 x 6" Gun, 6 x Truck.
 Mortar Sec: 4 x 50mm Mortar, 4 x Truck.
 Mortar Bty: 4 x 76mm Mortar, 4 x Truck.
 Mortar Bty: 4 x 3" Mortar, 4 x Truck.
 Mortar Bty: 4 x 4.2" Mortar, 4 x Truck.
 Inf Plt: 3 x Rifle/RL Squad, 3 x Truck.
 Inf Plt: 3 x Rifle/RL Squad, 3 x Carrier.
 Eng Plt: 3 x Engineer Squad, 3 x Truck.
 MG Plt: 2 x HMG, 2 x Truck.

Soviet force characteristics:

morale: 8 control: 6 supply: 8
 air assets: Heavy prop/no player control.

Available Soviet units:

Tank Plt: 3 x T-34/76 (late).
 Tank Plt: 3 x T-34/85.
 L Tank Plt: 3 x T-60.
 L Tank Plt: 3 x T-70.
 Tank Plt: 3 x KV-I (late).
 Tank Plt: 3 x KV-85.
 Tank Plt: 3 x JS-II.
 Recce Plt: 3 x BA-32 Armd Car.
 Recce Plt: 3 x BA-64 Armd Car.
 TD Plt: 3 x SU-76.
 TD Plt: 3 x SU-85.
 As Gun Plt: 3 x SU-122.
 As Gun Plt: 3 x SU-152.
 As Gun Plt: 3 x JSU-122.
 As Gun Plt: 3 x JSU-152.
 AA Plt: 4 x Truck/Quad HMG.
 AA Bty: 6 x 37mm AA Gun, 6 x Truck.
 AT Bty: 6 x 45mm AT Gun, 6 x Truck.
 AT Bty: 6 x 57mm AT Gun, 6 x Truck.
 AT Bty: 6 x 76mm AT Gun, 6 x Truck.
 Gun Bty: 4 x 76mm Howitzer, 4 x Truck.
 Gun Bty: 4 x 76mm Gun, 4 x Truck.
 Gun Bty: 6 x 122mm Howitzer, 6 x Truck.
 Gun Bty: 6 x 122mm Gun, 6 x Truck.
 Gun Bty: 6 x 152mm Howitzer, 6 x Truck.
 Gun Bty: 6 x 152mm Gun, 6 x Truck.
 Gun Bty: 6 x 152mm Field Gun, 6 x Truck.
 Mortar Sec: 2 x 50mm Mortar, 2 x Truck.
 Mortar Bty: 9 x 82mm Mortar, 9 x Truck.
 Mortar Bty: 6 x 120mm Mortar, 6 x Truck.
 MRL Bty: 6 x BM-13 Katyusha.
 Inf Plt: 3 x Rifle Squad, 3 x Truck.
 SMG Plt: 3 x SMG Squad, 3 x Truck.

Eng Plt: 3 x Engineer Squad, 3 x Truck.
 Recce Plt: 3 x Lt. Rifle Squad, 3 x Motorcycles.
 Recce Plt: 3 x Lt. Rifle Squad, 3 x Horses.
 Recce Plt: 3 x Lt. Rifle Squad, 3 x Halftrack.
 MG Plt: 2 x HMG, 2 x Truck.

American force characteristics:

morale: 7 control: 7 supply: 9
 air assets: Heavy prop/partial player control.

Available American units:

L Tank Plt: 5 x M3 Stuart.
 L Tank Plt: 5 x M5 Stuart.
 Tank Plt: 5 x M4/75 Sherman.
 Tank Plt: 5 x M4/76 Sherman.
 Tank Plt: 5 x M4 Sherman Jumbo.
 SP Gun Plt: 5 x M4/105 Sherman.
 SP Gun Bty: 6 x M7 HMC Priest.
 Lt Gun Plt: 3 x M8 HMC.
 SP Gun Bty: 6 x M12 HMC.
 AT Plt: 4 x M2 GMC.
 AT Plt: 4 x M3 GMC.
 TD Plt: 4 x M10 GMC Wolvrine.
 TD Plt: 4 x M18 GMC Hellcat.
 TD Plt: 4 x M36 GMC Jackson.
 AA Plt: 4 x M16 MGMC.
 AA Plt: 4 x T28 MGMC.
 SP Gun Bty: 4 x T30 HMC.
 AA Bty: 6 x 40mm AA Gun, 6 x Truck.
 AT Bty: 4 x 57mm AT Gun, 4 x Halftrack.
 AT Bty: 4 x 57mm AT Gun, 4 x Truck.
 Gun Bty: 6 x 105mm Gun, 6 x Truck.
 Gun Bty: 6 x 155mm Howitzer, 6 x Truck.
 Gun Bty: 6 x 155mm Gun, 6 x Truck.
 Gun Bty: 6 x 8" Gun, 6 x Truck.
 Mortar Sec: 4 x 60mm Mortar, 4 x Truck.
 Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
 Mortar Bty: 3 x M4 SP Mortar.
 Recce Plt: 4 x Jeep.
 Recce Plt: 4 x M3A1 Scout Car.
 Recce Plt: 6 x M8 Greyhound.
 Recce Plt: 6 x M20 Armd Car.
 SMG Plt: 3 x SMG/RL Squad, 3 x Truck.
 Inf Plt: 3 x Rifle/RL Squad, 3 x Truck.
 Inf Plt: 3 x Rifle/RL Squad, 3 x Halftrack.
 Eng Plt: 3 x Engineer Squad, 3 x Truck.
 MG Plt: 3 x HMG, 3 x Truck.
 MG Plt: 3 x HMG, 3 x Halftrack.

8. The Road to Berlin 1945 Europe

German force characteristics:

morale: 6 control: 7 supply: 6
 air assets: none available.

Available German units:

Recce Plt: 6 x PzKw IIL.
 Pz Plt: 5 x PzKw IIIL.
 Pz Plt: 5 x PzKw IIIN.
 Pz Plt: 5 x PzKw IVH.
 Pz Plt: 4 x PzKw VI Tiger I.
 Pz Plt: 4 x PzKw VI Tiger II.
 Pz Plt: 5 x PzKw V Panther.
 Recce Plt: 7 x SdKfz 221.
 Recce Plt: 7 x SdKfz 222.
 Recce Plt: 7 x SdKfz 234/1.
 Recce Plt: 7 x SdKfz 234/2.
 Recce Plt: 7 x SdKfz 234/4.
 JPz Plt: 4 x Marder.
 JPz Plt: 4 x JPz 38 Hetzer.
 JPz Plt: 4 x JPz IV.
 JPz Plt: 4 x JPz V JagdPanther.
 JPz Plt: 4 x JPz VI JagdTiger.
 JPz Plt: 4 x Nashorn.
 JPz Plt: 4 x Elefant.
 As Gun Plt: 4 x StuG III (late).
 As Gun Plt: 4 x StuH 42 SP Gun.
 As Gun Plt: 4 x StuG IV.
 As Gun Plt: 3 x StuPz IV Brumbar.
 As Gun Bty: 2 x Gw 38 SP Gun.
 SP Gun Bty: 6 x Wespe SP Gun.
 SP Gun Bty: 6 x Hummel SP Gun.
 FPz Plt: 3 x Wirbelwind.
 AT Plt: 4 x SdKfz 251/9.
 AT Plt: 4 x SdKfz 251/10.
 AA Plt: 2 x SdKfz 10/4.
 AA Plt: 2 x SdKfz 6/2.
 AA Plt: 3 x SdKfz 7/1.
 AA Plt: 2 x SP 20mm AA.
 AA Bty: 4 x 20mm AA Gun, 4 x Truck.
 AA Bty: 4 x 37mm AA Gun, 4 x Truck.
 AT Bty: 4 x 88mm DP Gun, 4 x Truck.
 AT Bty: 6 x 37mm AT Gun, 6 x Truck.
 AT Bty: 6 x 50mm AT Gun, 6 x Truck.
 AT Bty: 4 x 75mm AT Gun, 4 x Truck.
 Gun Bty: 6 x 75mm Gun, 6 x Truck.

InfGun Bty: 2 x 105mm Inf Gun, 2 x Truck.
 Gun Bty: 6 x 105mm Gun, 6 x Truck.
 InfGun Bty: 2 x 150mm Inf Gun, 2 x Truck.
 Gun Bty: 6 x 150mm Gun, 6 x Truck.
 Gun Bty: 6 x 170mm Gun, 6 x Truck.
 MRL Bty: 6 x Nebelwerfer, 6 x Truck.
 PzWr Bty: 6 x Panzerwerfer 42.
 Mortar Sec: 4 x 50mm Mortar, 4 x Truck.
 Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
 Mortar Bty: 4 x 120mm Mortar, 4 x Truck.
 Inf Plt: 4 x Rifle/HRL Squad, 4 x Truck.
 SMG Plt: 4 x SMG/HRL Squad, 4 x Truck.
 Eng Plt: 4 x Engineer Squad, 4 x Truck.
 Inf Plt: 4 x Rifle/HRL Squad, 4 x SdKfz 251/1.
 SMG Plt: 4 x SMG/HRL Squad, 4 x SdKfz 251/1.
 Eng Plt: 4 x Engineer Squad, 4 x SdKfz 251/1.
 Recce Plt: 4 x Lt. Rifle Squad, 4 x Motorcycles.
 Recce Plt: 4 x Lt. Rifle Squad, 4 x Bicycles.
 MG Plt: 2 x HMG, 2 x Truck.

British force characteristics:

morale: 7 control: 7 supply: 9
 air assets: Heavy prop/partial player control.

Available British units:

Tank Plt: 4 x M3 Stuart.
 Tank Plt: 4 x Churchill (late).
 Tank Plt: 4 x Firefly.
 Tank Plt: 4 x Cromwell.
 Tank Plt: 4 x Comet.
 Recce Plt: 4 x M3A1 Scout Car.
 Recce Plt: 8 x Scout Carrier.
 Recce Plt: 4 x Daimler Scout.
 Recce Plt: 4 x Humber III.
 Recce Plt: 4 x Humber Scout.
 Recce Plt: 4 x Daimler II.
 Recce Plt: 4 x Staghound.
 Recce Plt: 4 x AEC Armd Car.
 TD Plt: 4 x Archer.
 TD Plt: 4 x Achilles.
 SP Gun Bty: 6 x Sexton SP Gun.
 SP Gun Bty: 6 x M7 HMC Priest.
 AA Plt: 6 x Crusader AA.
 AA Bty: 4 x 40mm AA Gun, 4 x Truck.
 AA Plt: 2 x SP 40mm AA.
 AT Bty: 4 x 17 Pdr AT Gun, 4 x Truck.
 Gun Bty: 6 x 3" Howitzer, 6 x Truck.
 Gun Bty: 6 x 18 Pdr Gun, 6 x Truck.

Gun Bty: 6 x 25 Pdr Gun, 6 x Truck.
 Gun Bty: 6 x 6" Gun, 6 x Truck.
 Mortar Sec: 4 x 50mm Mortar, 4 x Truck.
 Mortar Bty: 4 x 76mm Mortar, 4 x Truck.
 Mortar Bty: 4 x 3" Mortar, 4 x Truck.
 Mortar Bty: 4 x 4.2" Mortar, 4 x Truck.
 Inf Plt: 3 x Rifle/RL Squad, 3 x Truck.
 Inf Plt: 3 x Rifle/RL Squad, 3 x Carrier.
 Eng Plt: 3 x Engineer Squad, 3 x Truck.
 MG Plt: 2 x HMG, 2 x Truck.

Soviet force characteristics:

morale: 8 control: 6 supply: 7
 air assets: Heavy prop/no player control.

Available Soviet units:

Tank Plt: 3 x T-34/76 (late).
 Tank Plt: 3 x T-34/85.
 L Tank Plt: 3 x T-70.
 Tank Plt: 3 x KV-85.
 Tank Plt: 3 x JS-II.
 Tank Plt: 3 x JS-III.
 Recce Plt: 3 x BA-32 Armd Car.
 Recce Plt: 3 x BA-64 Armd Car.
 TD Plt: 3 x SU-76.
 TD Plt: 3 x SU-85.
 TD Plt: 3 x SU-100.
 As Gun Plt: 3 x SU-122.
 As Gun Plt: 3 x SU-152.
 As Gun Plt: 3 x JSU-122.
 As Gun Plt: 3 x JSU-152.
 AA Plt: 4 x Truck/Quad HMG.
 AA Bty: 6 x 37mm AA Gun, 6 x Truck.
 AT Bty: 6 x 45mm AT Gun, 6 x Truck.
 AT Bty: 6 x 57mm AT Gun, 6 x Truck.
 AT Bty: 6 x 76mm AT Gun, 6 x Truck.
 Gun Bty: 4 x 76mm Howitzer, 4 x Truck.
 Gun Bty: 4 x 76mm Gun, 4 x Truck.
 Gun Bty: 6 x 122mm Howitzer, 6 x Truck.
 Gun Bty: 6 x 122mm Gun, 6 x Truck.
 Gun Bty: 6 x 152mm Howitzer, 6 x Truck.
 Gun Bty: 6 x 152mm Gun, 6 x Truck.
 Gun Bty: 6 x 152mm Field Gun, 6 x Truck.
 Mortar Sec: 2 x 50mm Mortar, 2 x Truck.
 Mortar Bty: 9 x 82mm Mortar, 9 x Truck.
 Mortar Bty: 6 x 120mm Mortar, 6 x Truck.
 MRL Bty: 6 x BM-13 Katyusha.
 Inf Plt: 3 x Rifle Squad, 3 x Truck.

SMG Plt: 3 x SMG Squad, 3 x Truck.
 Eng Plt: 3 x Engineer Squad, 3 x Truck.
 Recce Plt: 3 x Lt. Rifle Squad, 3 x Motorcycles.
 Recce Plt: 3 x Lt. Rifle Squad, 3 x Halftrack.
 MG Plt: 2 x HMG, 2 x Truck.

American force characteristics:

morale: 8 control: 7 supply: 9
 air assets: Heavy prop/partial player control.

Available American units:

L Tank Plt: 5 x M5 Stuart.
 Tank Plt: 5 x M4/75 Sherman.
 Tank Plt: 5 x M4/76 Sherman.
 Tank Plt: 5 x M4 Sherman Jumbo.
 SP Gun Plt: 5 x M4/105 Sherman.
 L Tank Plt: 5 x M24 Chaffee.
 Tank Plt: 5 x M26 Pershing.
 SP Gun Bty: 6 x M7 HMC Priest.
 Lt Gun Plt: 3 x M8 HMC.
 SP Gun Bty: 6 x M12 HMC.
 AT Plt: 4 x M2 GMC.
 AT Plt: 4 x M3 GMC.
 TD Plt: 4 x M10 GMC Wolvrine.
 TD Plt: 4 x M18 GMC Hellcat.
 TD Plt: 4 x M36 GMC Jackson.
 AA Plt: 4 x M16 MGMC.
 AA Plt: 4 x T28 MGMC.
 SP Gun Bty: 4 x T30 HMC.
 AA Bty: 6 x 40mm AA Gun, 6 x Truck.
 AT Bty: 4 x 57mm AT Gun, 4 x Halftrack.
 AT Bty: 4 x 57mm AT Gun, 6 x Truck.
 Gun Bty: 6 x 105mm Gun, 6 x Truck.
 Gun Bty: 6 x 155mm Howitzer, 6 x Truck.
 Gun Bty: 6 x 155mm Gun, 6 x Truck.
 Gun Bty: 6 x 8" Gun, 6 x Truck.
 Mortar Sec: 4 x 60mm Mortar, 4 x Truck.
 Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
 Mortar Bty: 3 x M4 SP Mortar.
 Recce Plt: 4 x Jeep.
 Recce Plt: 4 x M3A1 Scout Car.
 Recce Plt: 6 x M8 Greyhound.
 Recce Plt: 6 x M20 Armd Car.
 SMG Plt: 3 x SMG/RL Squad, 3 x Truck.
 Inf Plt: 3 x Rifle/RL Squad, 3 x Truck.
 Inf Plt: 3 x Rifle/RL Squad, 3 x Halftrack.
 Eng Plt: 3 x Engineer Squad, 3 x Truck.
 MG Plt: 3 x HMG, 3 x Truck.
 MG Plt: 3 x HMG, 3 x Halftrack.

9. The Dragon Wakes 1950 Asia, Europe

American force characteristics:

morale: 7 control: 7 supply: 7
 air assets: Heavy prop/partial player control.

Available American units:

L Tank Plt: 5 x M24 Chaffee.
 Tank Plt: 5 x M4 Sherman Jumbo.
 Tank Plt: 5 x M26 Pershing.
 Tank Plt: 5 x M46 Patton.
 AA Plt: 4 x M16 MGMC.
 AA Plt: 4 x T28 MGMC.
 AA Bty: 6 x 40mm AA Gun, 6 x Truck.
 AT Bty: 4 x 57mm AT Gun, 4 x Halftrack.
 AT Bty: 4 x 57mm AT Gun, 4 x Truck.
 AT Bty: 2 x 75mm Recoiless, 2 x Jeep.
 Gun Bty: 6 x 105mm Gun, 6 x Truck.
 Gun Bty: 6 x 155mm Howitzer, 6 x Truck.
 Gun Bty: 6 x 155mm Gun, 6 x Truck.
 Gun Bty: 6 x 8" Gun, 6 x Truck.
 Mortar Sec: 3 x 60mm Mortar, 3 x Truck.
 Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
 Mortar Bty: 6 x 4.2" Mortar, 6 x Truck.
 Recce Plt: 4 x Jeep.
 Recce Plt: 4 x M3A1 Scout Car.
 Recce Plt: 6 x M8 Greyhound.
 SMG Plt: 3 x SMG/RL Squad, 3 x Truck.
 Inf Plt: 3 x Rifle/RL Squad, 3 x Truck.
 Inf Plt: 3 x Rifle/RL Squad, 3 x Halftrack.
 Inf Plt: 3 x Rifle/HRL Squad, 3 x Truck.
 Inf Plt: 3 x Rifle/HRL Squad, 3 x Halftrack.
 Eng Plt: 3 x Engineer Squad, 3 x Truck.
 MG Plt: 3 x HMG, 3 x Truck.
 MG Plt: 3 x HMG, 3 x Halftrack.

S. Korean force characteristics:

morale: 7 control: 7 supply: 6.
 air assets: Heavy prop/partial player control.

Available S. Korean units:

AT Bty: 6 x 57mm AT Gun, 6 x Truck.
 Gun Bty: 5 x 105mm Gun, 5 x Truck.
 Mortar Sec: 3 x 60mm Mortar, 3 x Truck.
 Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
 Recce Plt: 3 x Lt. Rifle Squad, 3 x Horses.
 Recce Plt: 4 x Jeep.

Recce Plt: 6 x M8 Greyhound.
 Inf Plt: 3 x Rifle Squad, 3 x Truck.
 MG Plt: 3 x HMG, 3 x Truck.

N. Korean force characteristics:

morale: 8 control: 7 supply: 8
 air assets: none available.

Available N. Korean units:

Tank Plt: 3 x T-34/76 (late).
 Tank Plt: 3 x T-34/85.
 TD Plt: 4 x SU-76.
 AA Bty: 4 x 37mm AA Gun, 4 x Truck.
 AT Bty: 4 x 45mm AT Gun, 4 x Truck.
 Gun Bty: 4 x 76mm Howitzer, 4 x Truck.
 Gun Bty: 4 x 76mm Gun, 4 x Truck.
 Gun Bty: 4 x 122mm Howitzer, 4 x Truck.
 Gun Bty: 4 x 122mm Gun, 4 x Truck.
 Mortar Sec: 4 x 60mm Mortar, 4 x Truck.
 Mortar Bty: 9 x 82mm Mortar, 9 x Truck.
 Mortar Bty: 6 x 120mm Mortar, 6 x Truck.
 Inf Plt: 3 x Rifle Squad, 3 x Truck.
 SMG Plt: 3 x SMG Squad, 3 x Truck.
 Eng Plt: 3 x Engineer Squad, 3 x Truck.
 Recce Plt: 3 x Lt. Rifle Squad, 3 x Motorcycles.
 MG Plt: 2 x HMG, 2 x Truck.

Chinese force characteristics:

morale: 7 control: 6 supply: 7
 air assets: none available.

Available Chinese units:

AA Bty: 4 x 37mm AA Gun, 4 x Truck.
 AT Bty: 4 x 45mm AT Gun.
 Gun Bty: 4 x 75mm Gun, 4 x Truck.
 Gun Bty: 4 x 76mm Howitzer, 4 x Truck.
 Gun Bty: 4 x 76mm Gun, 4 x Truck.
 Gun Bty: 4 x 105mm Gun, 4 x Truck.
 Gun Bty: 4 x 122mm Howitzer, 4 x Truck.
 Gun Bty: 4 x 122mm Gun, 4 x Truck.
 Mortar Sec: 4 x 60mm Mortar.
 Mortar Bty: 4 x 82mm Mortar.
 Mortar Bty: 4 x 120mm Mortar.
 Inf Plt: 3 x Rifle Squad.
 SMG Plt: 3 x SMG Squad.
 Eng Plt: 3 x Engineer Squad.
 Recce Plt: 3 x Lt. Rifle Squad, 3 x Horses.
 Recce Plt: 3 x Lt. Rifle Squad, 3 x Motorcycles.
 MG Plt: 2 x HMG.

Soviet force characteristics:

morale: 8 control: 6 supply: 7
air assets: Heavy prop/partial player control.

Available Soviet units:

Tank Plt: 3 x T-34/85.
Tank Plt: 3 x T-54.
L Tank Plt: 3 x T-70.
Tank Plt: 3 x JS-III.
Recce Plt: 3 x BA-32 Armd Car.
Recce Plt: 3 x BA-64 Armd Car.
Recce Plt: 3 x BTR-40 Armd Car.
TD Plt: 3 x SU-85.
TD Plt: 3 x SU-100.
As Gun Plt: 3 x JSU-122.
As Gun Plt: 3 x JSU-152.
AA Plt: 4 x Truck/Quad HMG.
AA Bty: 6 x 37mm AA Gun, 6 x Truck.
AT Bty: 6 x 76mm AT Gun, 6 x Truck.
AT Bty: 3 x 100mm AT Gun, 3 x Truck.
Gun Bty: 6 x 122mm Howitzer, 6 x Truck.
Gun Bty: 6 x 122mm Gun, 6 x Truck.
Gun Bty: 6 x 152mm Howitzer, 6 x Truck.
Gun Bty: 6 x 152mm Gun, 6 x Truck.
Gun Bty: 6 x 152mm Field Gun, 6 x Truck.
Mortar Sec: 4 x 60mm Mortar, 4 x Truck.
Mortar Bty: 9 x 82mm Mortar, 9 x Truck.
Mortar Bty: 6 x 120mm Mortar, 6 x Truck.
MRL Bty: 6 x BM-13 Katyusha.
Inf Plt: 3 x Rifle/RL Squad, 3 x Truck.
SMG Plt: 3 x SMG/RL Squad, 3 x Truck.
Inf Plt: 3 x Rifle/RL Squad, 3 x BTR-152 APC.
SMG Plt: 3 x SMG/RL Squad, 3 x BTR-152 APC.
Eng Plt: 3 x Engineer Squad, 3 x Truck.
Recce Plt: 3 x Lt. Rifle Squad, 3 x Motorcycles.
Recce Plt: 3 x Lt. Rifle Squad, 3 x Halftrack.
MG Plt: 2 x HMG, 2 x Truck.

10. Six Day War 1967 Middle East, Europe

Israeli force characteristics:

morale: 9 control: 9 supply: 9
air assets: Light jet/full player control.

Available Israeli units:

Tank Plt: 3 x AMX-13.
Tank Plt: 3 x M4/75 Sherman.
Tank Plt: 3 x M50 Sherman.
Tank Plt: 3 x M51 Isherman.
Tank Plt: 3 x M48 (early).
Tank Plt: 3 x Centurion(early).
Tank Plt: 3 x Centurion (late).
Recce Plt: 4 x Jeep.
Recce Plt: 4 x M3A1 Scout Car.
AA Plt: 3 x M3/20mm AA.
AT Plt: 3 x Jeep 106mmRR.
TD Plt: 3 x M3/90.
SP Gun Bty: 6 x M7 HMC Priest.
Gun Bty: 6 x 105mm Gun, 6 x Truck.
Gun Bty: 6 x 155mm Gun, 6 x Truck.
Mortar Sec: 3 x M3/120mm Mortar.
Mortar Sec: 3 x 81mm Mortar, 3 x Truck.
Mortar Bty: 6 x M3/120mm Mortar.
Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
Inf Plt: 3 x Assault Squad, 3 x Truck.
Inf Plt: 3 x Assault Squad, 3 x Halftrack.

Arab force characteristics:

morale: 6 control: 7 supply: 9
air asset3s: Light jet/partial player control.

Available Arab units:

Tank Plt: 3 x M4/75 Sherman.
Tank Plt: 3 x PzKw IVH.
Tank Plt: 3 x M47 Patton II.
Tank Plt: 3 x M48 (early).
Tank Plt: 3 x Centurion(early).
Tank Plt: 3 x T-34/85.
Tank Plt: 3 x T-10.
Tank Plt: 3 x T-54.
Tank Plt: 3 x T-55.
Recce Plt: 3 x PT-76.
As Gun Plt: 3 x StuG III (late).
TD Plt: 3 x SU-100.
As Gun Plt: 3 x JSU-152.

AT Plt: 3 x Jeep 106mmRR.
Recce Plt: 4 x Jeep.
Recce Plt: 3 x BTR-40 Armd Car.
Recce Plt: 3 x BRDM Armd Car.
AA Plt: 2 x Truck/Quad HMG.
AA Plt: 4 x ZSU-57/2.
AT Bty: 3 x 85mm AT Gun, 3 x Truck.
AT Bty: 4 x 17 Pdr AT Gun, 4 x Truck.
AT Bty: 3 x 82mm Recoilless, 3 x Truck.
AT Bty: 3 x 107mm Recoilless, 3 x Truck.
AA Bty: 4 x ZPU-4 AA Gun, 4 x Truck.
SP Gun Bty: 6 x M-52 SP Gun.
Gun Bty: 6 x 25 Pdr Gun, 6 x Truck.
Gun Bty: 6 x 122mm Gun, 6 x Truck.
Gun Bty: 6 x 152mm Field Gun, 6 x Truck.
MRL Bty: 6 x BM-13 Katyusha.
MRL Bty: 6 x BM-24 MRL.
Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
Mortar Bty: 6 x 82mm Mortar, 6 x Truck.
Mortar Bty: 6 x 120mm Mortar, 6 x Truck.
Inf Plt: 3 x Assault Squad, 3 x Truck.
Inf Plt: 3 x Assault Squad, 3 x BTR-152 APC.
Inf Plt: 3 x Assault Squad, 3 x BTR-50 APC.
Inf Plt: 3 x Assault Squad, 3 x M113 APC.

Soviet force characteristics:

morale: 8 control: 8 supply: 9
air assets: Light jet/partial player control.

Available Soviet units:

Tank Plt: 3 x T-10.
Tank Plt: 3 x T-55.
Tank Plt: 3 x T-62.
As Gun Plt: 3 x ASU-57.
As Gun Plt: 3 x ASU-85.
Recce Plt: 3 x PT-76.
Recce Plt: 3 x BTR-40 Armd Car.
Recce Plt: 3 x BRDM Armd Car.
ATGM Bty: 3 x BRDM/Sagger.
ATGM Bty: 2 x AT-3 Sagger, 2 x Truck.
AT Bty: 3 x 85mm AT Gun, 3 x Truck.
AT Bty: 3 x 100mm AT Gun, 3 x Truck.
AT Bty: 3 x 82mm Recoilless, 3 x Truck.
AT Bty: 3 x 107mm Recoilless, 3 x Truck.
AA Bty: 4 x ZPU-4 AA Gun, 4 x Truck.

AA Bty: 4 x ZU-23 AA Gun, 4 x Truck.
AA Plt: 4 x ZSU-23/4.
AA Plt: 4 x ZSU-57/2.
Gun Bty: 6 x 122mm Gun, 6 x Truck.
Gun Bty: 6 x 130mm Gun, 6 x Truck.
Gun Bty: 6 x 152mm Field Gun, 6 x Truck.
Gun Bty: 6 x 180mm Gun, 6 x Truck.
MRL Bty: 6 x BM-21 MRL.
MRL Bty: 6 x BM-24 MRL.
Mortar Bty: 6 x 82mm Mortar, 6 x Truck.
Mortar Bty: 6 x 120mm Mortar, 6 x Truck.
Inf Plt: 3 x Assault/R Squad, 3 x Truck.
Inf Plt: 3 x Assault/R Squad, 3 x BTR-50 APC.
Inf Plt: 3 x Assault/R Squad, 3 x BTR-60 APC.

American force characteristics:

morale: 8 control: 8 supply: 9
air assets: Light jet/full player control.

Available American units:

Tank Plt: 5 x M60A1.
Tank Plt: 5 x M48 (late).
Recce Plt: 4 x Jeep.
Recce Plt: 6 x M114.
AT Plt: 3 x Jeep 106mmRR.
SP Gun Bty: 6 x M107 SP Gun.
SP Gun Bty: 6 x M109 SP Gun.
Gun Bty: 6 x 105mm Gun, 6 x Truck.
Gun Bty: 6 x 155mm Gun, 6 x Truck.
Mortar Sec: 2 x M125 SP Mortar.
Mortar Bty: 6 x M125 SP Mortar.
Mortar Bty: 4 x M106 SP Mortar.
Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
Mortar Bty: 4 x 4.2" Mortar, 4 x Truck.
Gunship Sc: 2 x AH-1 (early).
Inf Plt: 4 x Assault Squad, 4 x Truck.
Inf Plt: 4 x Assault Squad, 4 x M113 APC.

11. Jihad

1973 Middle East, Europe

Israeli force characteristics:

morale: 9 control: 9 supply: 9
air assets: Heavy jet/full player control.

Available Israeli units:

Tank Plt: 3 x M4/75 Sherman.
Tank Plt: 3 x M50 Sherman.
Tank Plt: 3 x M51 Sherman.
Tank Plt: 3 x M48 (late).
Tank Plt: 3 x Centurion (late).
Tank Plt: 3 x T-1967.
Tank Plt: 3 x M60A1.
AA Plt: 3 x M3/20mm AA.
TD Plt: 3 x M3/90.
AT Plt: 3 x M113/TOW.
AT Sec: 2 x Jeep/TOW.
AT Plt: 3 x Jeep 106mmRR.
Recce Plt: 4 x Jeep.
Recce Plt: 4 x M3A1 Scout Car.
Recce Plt: 4 x Staghound.
Recce Plt: 4 x AML-90.
Recce Plt: 4 x AMX-13.
SP Gun Bty: 6 x M107 SP Gun.
SP Gun Bty: 6 x M109 SP Gun.
SP Gun Bty: 6 x M110 SP Gun.
MRL Bty: 6 x BM-24 MRL.
Mortar Sec: 3 x M3/120mm Mortar.
Mortar Sec: 3 x M113/120mm Mr.
Mortar Bty: 6 x M3/120mm Mortar.
Mortar Bty: 6 x M113/120mm Mr.
Gun Bty: 6 x 105mm Gun, 6 x Truck.
Gun Bty: 6 x 155mm Gun, 6 x Truck.
Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
Inf Plt: 3 x Assault Squad, 3 x Truck.
Inf Plt: 3 x Assault Squad, 3 x Halftrack.
Inf Plt: 3 x Assault Squad, 3 x M113 APC.

Arab force characteristics:

morale: 7 control: 8 supply: 9
air assets: Light jet/partial player control.

Available Arab units:

Tank Plt: 3 x Centurion (late).
Tank Plt: 3 x M60A1.
Tank Plt: 3 x T-34/85.
Tank Plt: 3 x T-10.
Tank Plt: 3 x T-55.
Tank Plt: 3 x T-62.
TD Plt: 3 x SU-100.
Recce Plt: 3 x PT-76.
Recce Plt: 3 x BTR-40 Armd Car.
Recce Plt: 3 x BRDM Armd Car.
ATGM Bty: 3 x BRDM/Sagger.
AT Bty: 4 x 85mm AT Gun, 4 x Truck.
AT Bty: 3 x 100mm AT Gun, 3 x Truck.
ATGM Bty: 2 x AT-3 Sagger, 2 x Truck.
AT Bty: 3 x 82mm Recoilless, 3 x Truck.
AT Bty: 6 x 107mm Recoilless, 6 x Truck.
AA Bty: 4 x ZPU-4 AA Gun, 4 x Truck.
AA Bty: 4 x ZU-23 AA Gun, 4 x Truck.
AA Plt: 4 x ZSU-23/4.
Gun Bty: 6 x 25 Pdr Gun, 6 x Truck.
Gun Bty: 6 x 105mm Gun, 6 x Truck.
Gun Bty: 6 x 155mm Howitzer, 6 x Truck.
Gun Bty: 6 x 122mm Gun, 6 x Truck.
Gun Bty: 6 x 130mm Gun, 6 x Truck.
Gun Bty: 6 x 180mm Gun, 6 x Truck.
Gun Bty: 6 x 152mm Field Gun, 6 x Truck.
MRL Bty: 6 x BM-13 Katyusha.
MRL Bty: 6 x BM-21 MRL.
MRL Bty: 6 x BM-24 MRL.
Gun Bty: 6 x M109 SP Gun.
Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
Mortar Bty: 6 x 82mm Mortar, 6 x Truck.
Mortar Bty: 6 x 120mm Mortar, 6 x Truck.
Inf Plt: 3 x Assault/R Squad, 3 x Truck.
Inf Plt: 3 x Assault/R Squad, 3 x BTR-152 APC.
Inf Plt: 3 x Assault/R Squad, 3 x BTR-50 APC.
Inf Plt: 3 x Assault/R Squad, 3 x BTR-60 APC.
Inf Plt: 3 x Assault/R Squad, 3 x BMP-1 IFV.
Inf Plt: 3 x Assault Squad, 3 x M113 APC.
AB Inf Plt: 3 x Mi-8 Hip, 3 x Assault/R Squad.
AB Mtr Bty: 6 x Mi-8 Hip, 6 x 82mm Mortar.
AB AT Bty: 2 x Mi-8 Hip, 2 x AT-3 Sagger.

Soviet force characteristics:

morale: 8 control: 8 supply: 9
air assets: Light jet/partial player control.

Available Soviet units:

Tank Plt: 3 x T-55.
Tank Plt: 3 x T-62.
Tank Plt: 3 x T-64.
As Gun Plt: 3 x ASU-57.
As Gun Plt: 3 x ASU-85.
Recce Plt: 3 x PT-76.
Recce Plt: 3 x BTR-40 Armd Car.
Recce Plt: 3 x BRDM Armd Car.
ATGM Bty: 3 x BRDM/Sagger.
ATGM Bty: 2 x AT-3 Sagger, 2 x Truck.
AT Bty: 4 x 85mm AT Gun, 4 x Truck.
AT Bty: 3 x 100mm AT Gun, 3 x Truck.
AT Bty: 6 x 73mm Recoilless, 6 x Truck.
AA Bty: 4 x ZPU-4 AA Gun, 4 x Truck.
AA Bty: 4 x ZU-23 AA Gun, 4 x Truck.
AA Plt: 4 x ZSU-23/4.
Gun Bty: 6 x 122mm Gun, 6 x Truck.
Gun Bty: 6 x 130mm Gun, 6 x Truck.
Gun Bty: 6 x 180mm Gun, 6 x Truck.
Gun Bty: 6 x 152mm Field Gun, 6 x Truck.
MRL Bty: 6 x BM-21 MRL.
MRL Bty: 6 x BM-24 MRL.
Mortar Bty: 6 x 82mm Mortar, 6 x Truck.
Mortar Bty: 6 x 120mm Mortar, 6 x Truck.
Inf Plt: 3 x Assault/R Squad, 3 x Truck.
Inf Plt: 3 x Assault/R Squad, 3 x BTR-60 APC.
Inf Plt: 3 x Assault/R Squad, 3 x BMP-1 IFV.
AB Inf Plt: 3 x Mi-8 Hip, 3 x Assault/R Squad.
AB Mtr Bty: 6 x Mi-8 Hip, 6 x 82mm Mortar.
AB AT Bty: 2 x Mi-8 Hip, 2 x AT-3 Sagger.
AB AT Sec: 2 x Mi-8 Hip, 2 x 73mm Recoilless.

American force characteristics:

morale: 7 control: 8 supply: 9
air assets: Heavy jet/full player control.

Available American units:

Tank Plt: 5 x M48 (late).
Tank Plt: 5 x M60A1.
Tank Plt: 5 x M60A2.
Tank Plt: 5 x M551 Sheridan.
Recce Plt: 4 x Jeep.
Recce Plt: 6 x M114.
Recce Plt: 6 x M113/TOW.
AT Sec: 2 x Jeep/TOW.
AT Plt: 4 x M113/TOW.
AT Plt: 3 x Jeep 106mmRR.
SP Gun Bty: 6 x M107 SP Gun.
SP Gun Bty: 6 x M109 SP Gun.
SP Gun Bty: 6 x M110 SP Gun.
Gun Bty: 6 x 105mm Gun, 6 x Truck.
Gun Bty: 6 x 155mm Gun, 6 x Truck.
Mortar Sec: 2 x M125 SP Mortar.
Mortar Bty: 6 x M125 SP Mortar.
Mortar Bty: 4 x M106 SP Mortar.
Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
Gunship Sc: 2 x AH-1 (early).
Inf Plt: 4 x Assault/A Squad, 4 x Truck.
Inf Plt: 4 x Assault/A Squad, 4 x M113 APC.
AB Inf Plt: 3 x UH-1 Huey, 3 x Assault/A Squad.
AB Mtr Bty: 4 x UH-1 Huey, 4 x 81mm Mortar.

12. The Mother of All Battles 1991 Middle East

Coalition force characteristics:

morale: 8 control: 8 supply: 9
air assets: Light jet/partial player control.

Available Coalition units:

Tank Plt: 4 x M60A3.
Tank Plt: 3 x T-62.
Tank Plt: 3 x AMX-30.
Recce Plt: 8 x Scorpion.
Recce Plt: 4 x AML-90.
Recce Plt: 3 x VAB APC.
Recce Plt: 4 x BRDM Armd Car.
AT Plt: 4 x M901-ITV.
ATGM Bty: 2 x Milan ATGM, 2 x VAB APC.
AA Plt: 4 x ZSU-23/4.
Gun Bty: 6 x 2S1 SP Gun.
Gun Bty: 6 x 2S3 SP Gun.
Gun Bty: 6 x M109 SP Gun.
Gun Bty: 6 x 122mm Gun, 6 x Truck.
Gun Bty: 6 x 130mm Gun, 6 x Truck.
Gun Bty: 6 x 152mm Gun, 6 x Truck.
Gun Bty: 6 x 155mm Gun, 6 x Truck.
Gun Bty: 6 x 180mm Gun, 6 x Truck.
MRL Bty: 6 x BM-21 MRL.
MRL Bty: 9 x MLRS.
Mortar Bty: 6 x 81mm Mortar, 6 x Truck.
Mortar Bty: 6 x 82mm Mortar, 6 x Truck.
Mortar Bty: 6 x 4.2" Mortar, 6 x Truck.
Mortar Bty: 6 x 120mm Mortar, 6 x Truck.
Inf Plt: 3 x Assault/R Squad, 3 x Truck.
Inf Plt: 3 x Assault/R Squad, 3 x BTR-60 APC.
Inf Plt: 3 x Assault/R Squad, 3 x BMP-1 IFV.
Inf Plt: 3 x Assault/R Squad, 3 x M113 APC.
Inf Plt: 3 x Assault/R Squad, 3 x AMX-10 APC.
Inf Plt: 3 x Assault/R Squad, 3 x VAB APC.

British force characteristics:

morale: 9 control: 9 supply: 9
air assets: Heavy jet/full player control.

Available British units:

Tank Plt: 3 x Challenger.
Recce Plt: 8 x Scorpion.
Recce Sec: 2 x Scorpion.
Recce Plt: 8 x Scimitar.
Recce Plt: 4 x Ferret Armd Car.
AT Plt: 3 x Striker.
AT Plt: 6 x Milan ATGM, 6 x FV432 APC.
Gun Bty: 6 x M109 SP Gun.
Gun Bty: 6 x M110 SP Gun.
MRL Bty: 9 x MLRS.
Mortar Bty: 8 x FV432/81Mr.
Gunship Sc: 2 x Lynx AH1.
Inf Plt: 3 x Assault/B Squad, 3 x Warrior IFV.

French force characteristics:

morale: 9 control: 9 supply: 9
air assets: Heavy jet/full player control.

Available French units:

Tank Plt: 3 x AMX-30B2.
Recce Plt: 3 x AMX-10RC.
Recce Plt: 3 x VAB APC.
Recce Plt: 4 x Jeep.
ATGM Bty: 2 x Milan ATGM, 2 x VAB APC.
AA Bty: 2 x 20mm DP Gun, 2 x VAB APC.
Gun Bty: 6 x 155mm Gun, 6 x Truck.
Mortar Sec: 2 x 81mm Mortar, 2 x VAB APC.
Mortar Bty: 6 x 120mm Mortar, 6 x VAB APC.
Inf Plt: 3 x Assault/R Squad, 3 x VAB APC.

American force characteristics:

morale: 9 control: 9 supply: 9
air assets: Heavy jet/full player control.

Available American units:

Tank Plt: 4 x M1A1 Abrams.
Tank Plt: 4 x M551 Sheridan.
Recce Plt: 6 x M3 Bradley IFV.
Recce Sec: 2 x M998 Humvee.
AT Plt: 4 x M901-ITV.
AA Plt: 4 x M163 SP AA.
Gun Bty: 8 x M109 SP Gun.
Gun Bty: 6 x M110 SP Gun.
Gun Bty: 6 x 155mm Gun, 6 x Truck.
MRL Bty: 9 x MLRS.
Mortar Sec: 2 x M125 SP Mortar.
Mortar Bty: 6 x M125 SP Mortar.
Gunship Sc: 2 x AH-1 Cobra, 1 x OH-58 Kiowa.
Gunship Sc: 2 x AH-64 Apache, 1 x OH-58 Kiowa.
AB Inf Plt: 3 x UH-60 Blackhawk, 3 x Assault/A Squad.
AB Mtr Bty: 4 x UH-60 Blackhawk, 4 x 81mm Mortar.
Inf Plt: 4 x Assault/A Squad, 4 x M2 Bradley IFV.

Iraqi force characteristics:

morale: 3 control: 6 supply: 6
air assets: none available.

Available Iraqi units:

Tank Plt: 4 x T-55.
Tank Plt: 4 x T-62.
Tank Plt: 4 x T-72 (early).
Tank Plt: 4 x T-72 (late).
Recce Plt: 4 x BRDM Armd Car.
Recce Plt: 4 x PT-76.
Recce Plt: 4 x ERC-90.
Recce Plt: 4 x AML-90.
AT Plt: 3 x BRDM/Sagger.
ATGM Bty: 2 x AT-3 Sagger, 2 x Truck.
ATGM Bty: 2 x AT-4 Spigot, 2 x Truck.
AT Bty: 3 x 100mm AT Gun, 3 x Truck.
AT Bty: 6 x 73mm Recoilless, 6 x Truck.
AT Bty: 3 x 82mm Recoilless, 3 x Truck.
AT Bty: 6 x 107mm Recoilless, 6 x Truck.
AA Bty: 4 x ZPU-4 AA Gun, 4 x Truck.
AA Bty: 4 x ZU-23 AA Gun, 4 x Truck.
AA Plt: 4 x ZSU-57/2.
AA Plt: 4 x ZSU-23/4.
AA Plt: 4 x BRDM/SA-9.
AA Plt: 4 x SA-13 Gopher.
SP Gun Bty: 6 x 2S1 SP Gun.
SP Gun Bty: 6 x 2S3 SP Gun.
MRL Bty: 6 x BM-13 Katyusha.
MRL Bty: 6 x BM-21 MRL.
Gun Bty: 6 x 122mm Gun, 6 x Truck.
Gun Bty: 6 x 130mm Gun, 6 x Truck.
Gun Bty: 6 x 152mm Gun, 6 x Truck.
Gun Bty: 6 x 155mm Gun, 6 x Truck.
Gun Bty: 6 x 180mm Gun, 6 x Truck.
Mortar Sec: 2 x 60mm Mortar, 2 x Truck.
Mortar Sec: 2 x 82mm Mortar, 2 x Truck.
Mortar Bty: 6 x 82mm Mortar, 6 x Truck.
Mortar Bty: 6 x 120mm Mortar, 6 x Truck.
Inf Plt: 3 x Assault/R Squad, 3 x Truck.
Inf Plt: 3 x Assault/R Squad, 3 x Type 63 APC.
Inf Plt: 3 x Assault/R Squad, 3 x BTR-50 APC.
Inf Plt: 3 x Assault/R Squad, 3 x BTR-60 APC.
Inf Plt: 3 x Assault/R Squad, 3 x BMP-1 IFV.

Appendix I - Standard Map Tiles

Each of the three tilesets has the following tiles available for use in creating scenario maps.

Base (opaque) terrain:

Open terrain:

- Tile 1 Level 1 (lowest elevation/dark color)
- Tiles 2-27 Level 2 (medium elevation/medium color)
- Tiles 28-53 Level 3 (highest elevation/light color)

Stream / Wadi terrain:

- Tiles 54-72 stream or wadi (all level 1)

River / Lake terrain:

- Tiles 73-97 river / lake (all level 1)

River / Lake / Stream terrain:

- Tiles 98-117 river / lake / stream (all level 1)

Unique terrain

- Tile 118 marsh (level 1)
- Tile 119 plowed field (level 1)
- Tile 120 depression (level 1)

Open terrain with escarpments (cliffs)

- Tiles 121-144 Level 2 (medium elevation) escarpment
- Tiles 145-168 Level 3 (highest elevation) escarpment

Transparent Terrain:

- Tiles 169-187 Berm
- Tile 188 Fortification
- Tiles 189-207 Paved road
- Tile 208 Light woods
- Tiles 209-227 Unpaved road
- Tile 228 Dense woods
- Tile 229 Mines
- Tile 230 Abatis

Note: The temperate and frozen tilesets include stream tiles, and the arid tileset includes wadi tiles instead.

Appendix J - Notes on Scenario Creation

Finding Historical Information

TANKS! covers a lot of historical ground. Details of historical orders of battle for some forces and historical periods can be difficult to find. Maps can be even more difficult to come by.

Walk into any large bookstore and you will find a discount table. This is usually a great place to look for books on the history of the mechanized battlefield. Many of these books have rough maps and vague orders of battle for forces in particular battles. In rare cases, the information can be quite detailed. These books can also help fill you in on the history of periods that interest you.

Over the years, quite a few miniatures rules sets which cover 20th century warfare have been published. The selection varies from one year to the next, so we can't make any specific recommendations. But in general, all of these rules sets include fairly detailed sample orders of battle for their relatively narrow historical setting. Usually, there are also scenarios which can be adapted to TANKS!. Miniatures rules like these are generally found only in specialized hobby shops.

Some of the books and rules sets listed in the bibliography below can also be useful, although many are out of print and/or expensive.

Drawing Maps

The scenario editor allows considerable freedom in map design. It is possible to design a map that makes your scenario absolutely unplayable.

Remember that most units are limited in their ability to cross streams. If you include streams on your maps, be sure to place roads across the streams every couple of kilometers (8 hexes) or so. This is doubly true of rivers and lakes. Prior to 1967, amphibious capability is extremely rare, and even in modern scenarios your heavy armor needs bridges to cross rivers.

Real road nets tend to follow streams and rivers and avoid the tops of hills.

Your maps will look more natural if you take care to have your streams drain generally in the same direction. If you have rivers, streams should drain into them. Pick a direction that the map "dips" towards. Usually, the meeting of two streams should form a rough angle pointing in the direction of the dip. Marsh hexes should be placed near streams, especially near junctions.

Place your towns and villages on roads. Scatter plowed fields near your villages. Scatter a few village hexes among and around town hexes. The sturdy buildings found in central portions of a real town tend to be surrounded by areas of lighter construction.

Woods should be concentrated away from densely inhabited or cultivated areas, especially along the tops of hills and ridges and near streams and rivers.

Building Orders of Battle

Most battles come in one of two flavors: assaults, and meeting engagements. In an assault, the defender sits on the objective while the attacker must seize it. In a meeting engagement, objectives may be different, with both sides on the attack.

In assaults, you should give the attacker a stronger force than the defender. If there are to be many fortifications, mines, or difficult terrain types, the strength difference should be significant.

Meeting engagements have to be carefully balanced. Objectives should be widely separated, perhaps on opposite sides of the map. Both sides should have roughly the same strength.

Scenarios with fewer than 100 units on a side should be based on company-sized formations of from three to five units. Larger scenarios should be based on battalion-sized formations of up to twenty-four units. Even in larger scenarios some formations should remain small: reconnaissance, gunship, anti-tank, etc.

The random order of battle creator is pretty good at building historical formations. If you're not sure what an order of battle should look like for the forces you're using in your scenario, examine the kinds of random forces the editor creates.

There are a few constant features throughout the 20th century. The typical military organization for the last half century has been "triangular", with companies made up of three or four platoons, battalions comprising two to four companies, regiments or brigades made up of two to four battalions and finally, divisions of three to four regiments or brigades.

Roughly 70% of a force should be made up of infantry or tank units. At each level of organization, about 30% of the force is made up of support units. A company of three infantry platoons might have one or two mortar or anti-tank gun batteries assigned. A battalion might have an anti-tank or recon company. A regiment would typically have a battalion of artillery, and

perhaps an engineer or assault gun company. Divisions can have all kinds of unusual support units assigned: super heavy artillery, special tank destroyers, oddball recon outfits, etc.

Arabs and Coalition forces

In the 1967 and 1973 periods, the Arab nationalities of Egypt, Syria and Jordan are lumped together under one flag. For the most part, Egyptian and Syrian forces were similarly equipped with Soviet style equipment. In 1967, the Syrians had a bit of old Second World War vintage German stuff. The Jordanians, however, were equipped with western style equipment. The random order of battle generator is "smart" enough to take this into account, and will produce the following distinct types of Arab forces:

1967: 40% Egyptian, 40% Jordanian, 20% Syrian

1973: 40% Egyptian, 40% Syrian, 20% Jordanian

If you're not really sure what qualifies as "western" or Soviet, examine a few randomly created orders of battle for 1967 and 1973. A distinctive pattern of selections will be apparent in the Arab forces.

Coalition forces in 1991 are a bit more complicated. The Syrians had Soviet equipment. The Egyptians had a selection of western and Soviet equipment. Other Arab forces had a truly eclectic selection of everything under the sun. The random scenario generator will tend to create mixed forces based on smaller Arab allies.

Force Deployments

Determine the approaches to the objectives. Is there a road? Are there blocking terrain features? An attacking armored force isn't going to ford streams or plow through thick woods if it doesn't have to.

Place defending forces near their objectives. If you have a mix of armor and infantry, place infantry on the objective and put the armor nearby where it can cover the approaches with fire. This forces the attacker to deal with all of your defensive force. Try to place as many units as possible in covering terrain: woods, towns, villages, wadis, etc. If you simply deploy in a big blob on the objective, parts of your force will be wasted or over-exposed. Pick the approaches and try to make sure that every unit possible can fire into them. Don't worry about the attacker bypassing your outlying units. Except in the earliest scenarios, it will be very expensive for the attacker to ignore defenders anywhere near the approach to the objective. Don't forget the back door. If you leave an approach uncovered it can be difficult to retake the objective with your main force already engaged from the front.

Place attacking forces so that they have an easy path to their objectives. It is usually preferable to put attackers in dense columns along a road rather than scattered through woods. If your force is large enough, send part of it along a different path to the objective rather than concentrating everything along one road past the enemy guns. Don't place slow units far from their objective. You can spend an entire game just moving things like Churchills and Elephants halfway across the map.

Both defenders and attackers should place their indirect fire artillery units as far behind their lead formations as possible. These types of units don't need to be exposed to enemy fire. Long distances do increase the chance that indirect fire will occasionally go into the wrong hex, but these units are so valuable and fragile that you don't want the other fellow to get a clear shot at them.

Place anti-aircraft units near your high value units. It is tempting to use these units for direct support, especially against enemy infantry. However, the best use for anti-aircraft equipment is defense against enemy airstrikes.

Air Support and Fortifications

Fortifications, mines, and abatis can be used to beef up a weak defending force. Infantry in fort hexes is quite difficult to destroy. Mines can either be used in large fields (many hexes wide and deep) to force large attacker casualties, or in small fields to force the attacker along selected paths. Abatis are good for breaking up roads and slowing attackers down in front of the defender's guns.

Air support can be a boon to either force, especially if the enemy relies heavily on fragile artillery units.

Appendix K - Designer's Notes

Tactics

There are a few things you can do to increase your chance of winning TANKS!:

Some of the notes on scenario design also apply to game play. In general, you'll do well if you can concentrate your fire on the other fellow while preventing him from doing the same to you.

If you are defending, set up "kill zones" where your units can concentrate lethal fire from protected positions along the approaches to the scenario objectives. In most cases the effective range of your weapons will be about four hexes or less. The effective ranges will decrease if visibility is poor, and they will increase if you have modern weapons. Place your long range units where they can get the most use of their range. It's not too smart to put a Tiger II company in the middle of the woods if there is a nice open field nearby. Even if your effective ranges are short, be sure to keep as much of the approaches under observation as possible. If you can keep this area "spotted", you can call indirect fire on the advancing enemy forces. Never leave the objective hexes unguarded and never leave anything mounted.

As the attacker, you should avoid defensive kill zones. In some cases, this means aiming your attack at one side of the enemy defensive position. In order to keep up your momentum, avoid starting firefights. Let the defender shoot first. Remember that you are at a disadvantage while moving unless your units have stabilized weapons. Smoke can be used to block enemy fields of view, especially if the wind isn't strong. Don't bother with smoke if the other player has thermal vision equipment in his units. If you have recon units, use them to scout enemy positions. There is no need to expose your tank and infantry units to ambush. If you have mounted equipment, be sure to dismount a few hexes away from the defender. Your infantry is very easy to kill if it is sitting in trucks. If fields of view are very restricted, consider letting your artillery do as much of the work of rooting out the defenders as possible. Almost any weapon can hurt you at one hex range, and that's where most of the fighting takes place at night, in dense forests, or in large cities.

Pick your shots carefully. If you fire weapons beyond their effective ranges, you will probably waste ammo that will be needed later. Don't bother with "weak" fire orders. It is easy to run out of ammo in this game. Ammo restrictions don't really apply to indirect fire weapons in static positions, which are usually easily resupplied. Some of your weapons are best used against particular types of targets. This is true of ATGM's. ATGM launchers

tend to run out of ammo quickly and should only be used against high value targets. On the other hand, they are lethal against armored vehicles all the way out to their most extreme ranges.

There is never a good reason to place indirect fire units where the enemy can shoot at them. The great advantage of these units is their ability to plaster the other fellow without being exposed to return fire.

If you are playing with the advanced command rules and your artillery has counter-battery radar, you might want to hold some of your artillery back until the enemy has fired his artillery. Then hit him with your reserve artillery.

In night scenarios set from 1967 on, it is important to survey your units to see if any of them have night vision equipment. Their extended fields of view can be very useful, especially if the enemy lacks night vision equipment.

Don't despair if your units seem to be weak compared to enemy units. Get them close enough, and place them at enough angles to get a few side shots, and even Stuarts can kill Tigers. On the other hand, you should avoid face to face fights against superior equipment unless you have superior numbers. Those Tigers are going to kill a lot of Stuarts....

Close assaults are unpredictable. If your formations have good morale, they will do well in close assaults. This is particularly true if the enemy has poor morale. But you should always consider the close assault only as a last resort. Don't try to close assault enemy units in fort hexes unless you know the enemy is low on ammo. Forts are the best morale boosters in close assaults. Low ammo is the worst morale drain.

If you are playing with the advanced command rules and you have airstrikes, use them against the enemy artillery. Artillery is usually very fragile and your pilots are good at finding it. If you aren't sure where the enemy artillery is, just select a target in the general area and the strike will try to locate it. Or, simply let your pilots pick their own targets.

Keep anti-aircraft units near your artillery positions, especially from 1967 on. While a four-barrel heavy machine gun makes a dandy anti-infantry weapon, it really is needed in the anti-aircraft role.

Don't assume that the tactics of one historical period will work well in another. While broad tactical concepts will apply no matter which period you are playing, the details will vary. The tank charge that worked so well across a Polish field in 1939 might produce very different results on the sands of the Sinai in 1973. The infantry your armor could more or less ignore in 1942 could very well grow teeth in 1944.

Suggested Reading

Research for TANKS! continued for the entire two years of its development. Quite a few references were consulted. This is a very small list of some of my favorites. They weren't all particularly useful, but each has something to recommend it.

Deighton, Len. *Blitzkrieg*. New York: Ballantine Books, 1982. (The story of the German advance across France in 1940.)

Guderian, Heinz. *Panzer Leader (Abridged)*. New York: Ballantine Books, 1972. (My copy is rather old but I believe this book has been in continual print since 1957. Personal memoirs of General Guderian in WWII.)

Icks, Robert. *Tanks and Armored Vehicles 1900-1945*. Connecticut: WE Inc., 1970. (Such rich detail of the "Iron Fist" as only true tank lovers could absolutely relish.)

Isby, David C. and Kamps, Charles. *Armies of NATO's Central Front*. London, New York: Jane's Publishing Company Limited, 1985. (NATO armies of the mid '80's. Rather dated now, but still useful.)

Isby, David C. *Weapons and Tactics of the Soviet Army (Revised Edition)*. London, New York: Jane's Publishing Company Limited, 1988. (A very thorough examination of the Soviet army of the late 1980's.)

Katz, Samuel M. *Israeli Tank Battles*. London: Arms and Armour Press, 1988.

Macksey, Kenneth. *Tank vs. Tank*. New York: Crescent Books, 1991. (A nice little history of the period covered by TANKS!)

Preston, Richard A and Wise, Sydney E. *Men in Arms (Fourth Edition)*. New York: Holt, Rinehart and Winston, 1979 (A good overview of the history of western warfare from ancient times to the cold war period.)

Zaloga, Steven J. *Armor of the Middle East Wars 1948-78*. London: Osprey Publishing, 1989. (If Steven Zaloga wrote it, it's got to be good.)

Zaloga, Steven J. *Blitzkrieg Armor Camouflage and Markings 1939-1949*. London: Arms and Armour Press, 1990.

Appendix L - Abbreviations Used in TANKS!

AA	Anti-aircraft
AB	Airborne
APC.....	Armored Personnel Carrier
Armd Car	Armored Car
AS Gun	Assault Gun
AT	Anti-tank
ATe.....	Anti-tank - enhanced
ATGM.....	Anti-tank Guided Missile
ATl	Anti-tank - laser rangefinder sight
ATr	Anti-tank - reticle sight
Bde	Brigade
Bn.....	Battalion
Bty.....	Battery
Co	Company
CG.....	Chain Gun
Char	Tank (French)
Char Léger.....	Light tank (French)
cm	Centimeter
DP	Dual Purpose
Dual	Weapons mount with two identical guns
Eng.....	Engineer
FG	Field Gun
GMC	Gun Motor Carriage (American WWII)
HMC	Howitzer Motor Carriage (American WWII)
HMG	Heavy Machine Gun (12.7mm or larger)
How	Howitzer
HRL.....	Heavy Rocket Launcher
IFV	Infantry Fighting Vehicle
in.....	Inch (British gun sizes)
Inf	Infantry

InfGun	Infantry Gun
ITV	Improved TOW vehicle (American 1991)
JPz.....	Tank destroyer (German:JagdPanzer)
LMG.....	Light Machine Gun
Lt or L.....	Light
MLRS	Multiple Launch Rocket System (American 1991)
MRL	Multiple Rocket Launcher
mm.....	Millimeter
MMG.....	Medium Machine Gun
MGMC.....	Machine Gun Motor Carriage (American WWII)
Mr	Mortar
Plt.....	Platoon
Pdr	Pounder (British gun sizes)
Pz	Tank (German: Panzer)
PzJ.....	Tank Destroyer (German: PanzerJaeger)
PzKw.....	Tank (German: PanzerKampfWagen)
PzWr	Tank (German: Panzerwerfer)
Quad	Weapons mount with four identical guns
Recce.....	Reconnaissance
Recoilless.....	Recoilless Rifle
RL	Rocket Launcher
RPG.....	Rocket Propelled Grenade
RR	Recoilless Rifle
SdKfz	Vehicle (German)
Sec.....	Section
Stos	Heavy Infantry (German WWI:Stosstruppen)
StuPz.....	Assault Gun (German: SturmPanzer)
Supt	Support
SP	Self Propelled
TD.....	Tank Destroyer

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